DTC-670

SERVICE MANUAL

AEP Model

SPECIFICATIONS

Tape	Digital audio tape
Recording head	Rotary head
Recording time	Standard: 120 minutes. Long-play mode: 240 minutes (with DT-120)
Tape speed	Standard: 8.15 mm/s, Long play mode: 4.075 mm/s
Drum rotation	Standard: 2,000 rpm, Long-play mode: 1,000 rpm
Error correction	Double Read Solomon code

Tape

Track pitch	13.6 µm (20.4 µm)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Modulation system	8–10 Modulation
Transfer rate	2.46 Mbit/sec.
Number of channel	2 channels, stereo
D/A conversion (Quantization)	Standard: 16-bit linear Long-play mode: 12-bit non-linear
Frequency response	Standard: 2–22,000 Hz (±0.5 dB) Long-play mode: 2–14,500 Hz (±0.5 dB)
Signal to noise ratio	Standard: more than 90 dB Long-play mode: more than 90 dB
Dynamic range	Standard: more than 90 dB Long-play mode: more than 90 dB
Total harmonic distortion	Standard: less than 0.005% (1 kHz) Long-play mode: less than 0.08% (1 kHz) Below measurable limit (±0.001% W. PEAK)

Model Name Using Similar Mechanism	DTC-57ES
Tape Transport Mechanism Type	DATM-100

Wow and flutter

Input

	Jack type	Impedance	Rated input level
LINE IN	phono jack	47 kohms	–4 dBs
DIGITAL IN	phono jack	75 ohms	0.5 Vp-p, 20%
DIGITAL IN	optical jack	—	—

Output

	Jack type	Impedance	Rated output	Load impedance
LINE OUT	phono jack	470 ohms	–4 dBs	More than 10 kohms
PHONES	stereo phone jack	220 ohms	1.3 mW	32 ohms

DIGITAL OUT (optical jack): wavelength 660 nm

– continued on next page –

MICROFILM

DIGITAL AUDIO TAPE DECK

SONY

General

Power requirements	220 - 230 V AC, 50/60 Hz
Power consumption	32 W
Dimensions	Approx. 430x125x350 mm (w/h/d) (17 x 5 x 13 $^{7}/_{8}$ inches)
Weight	Approx. 7 kg (15 lb 14 oz)

Remote commander (supplied)

Remote control system	Infrared control
Power requirements	3V DC, with two size AA (R6) batteries
Dimensions	Approx. 63x19x175 mm (w/h/d) (2 $^{1}/_{2}$ x $^{3}/_{4}$ x 7 inches)
Weight	Approx. 130 g (4 oz) incl. batteries.

Supplied accessories

Sony batteries SUM-3(NS) (2)
Audio connecting cords (2 phono plugs - 2 phono plugs, stereo for line inputs and outputs) (2)

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

PRECAUTIONS FOR INSPECTIONS AND REPAIR WITH POWER OFF

Before beginning repair work after turning OFF the main switch, be sure to first remove CN932 (EH8P) of the power board. When assembling the equipment, be sure to plug this connector last.
This is because, even with the main switch turned OFF, electric charges still remain in the smoothing capacitor in the power board. Therefore, if another flexible board is inserted or removed, a terminal of the power supply may short an adjacent terminal while destroying the device.

This section is extracted from instruction manual.

SECTION 1
GENERAL

Overview of the Digital Audio Tape Deck

Serial copy management system

This unit utilizes the serial copy management system that permits digital-to-digital recording for one generation. You can record CD sound or other digital formats through a digital-to-digital connection. (See page 36.)

Three sampling frequencies

Recording/playback can be done with three sampling frequencies (48 kHz, 44.1 kHz and 32 kHz).
48 kHz: For analog and digital input signals in a standard mode.
44.1 kHz: For compact disc and pre-recorded DAT tape.
32 kHz: For analog input signals in a long-play mode.

Long play mode

This unit can operate in a long-play mode. Analog input signals can be recorded or playback for up to four consecutive hours when the DT-120 DAT cassette tape is used. The sampling frequency will be 32 kHz in the long play mode.

Visible cassette loading

You can view the tape operation through the lid of the cassette compartment. Due to a revolutionary new transport mechanism, cassette loading time has been significantly reduced.

Excellent sound quality

- **1-bit A/D converter**
  For the A/D converter section which converts analog input signals to digital signals, the unit employs a 1-bit A/D converter which theoretically generates no zero-cross distortion for a clear, elegant sound quality.
- **Pulse D/A converter**
  Superior playback performance is achieved with a 1-bit D/A converter.

Rich variety of subcode information

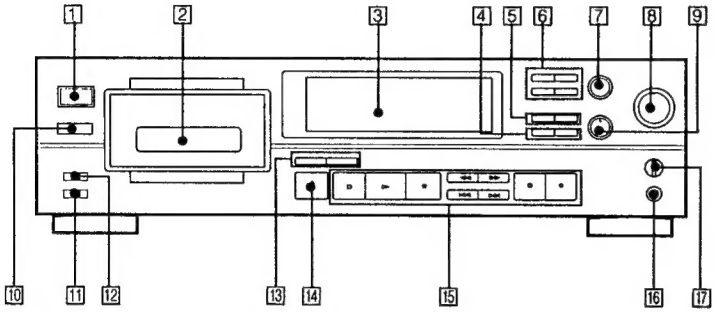
This unit can record subcode information such as Start IDs, program numbers, Skip IDs, and absolute time data, enabling you to quickly locate tunes and display the playback time in the same manner as when playing compact discs.

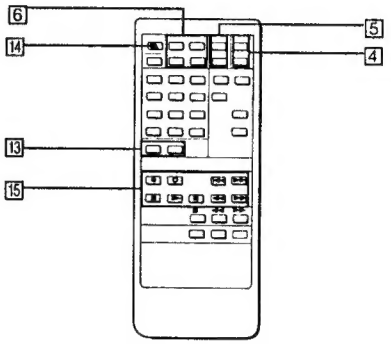
Post edit recording of sub codes

You can record or rewrite the following sub codes after the audio signal recording has been completed.
Start ID: Signifies the beginning of a selection.
Program number: Gives a number to the selection.
Skip ID: Signifies the beginning of a portion to be skipped.
End ID: Signifies the end position of recording/playback.
Since sub codes are written on the tape separately from audio signals, the audio signals are not affected.

Identifing Parts and Controls

This section describes the names and functions of each parts of this unit. Before operating this unit, please read carefully.





Front Panel/Remote Commander

1 POWER switch
Turns the power on and off.

2 Cassette compartment
Insert a cassette with the window side up and the safety tab facing you.

3 Display window

4 END ID buttons
WRITE: Press to write the ID signifying the end of playback or recording.
ERASE: Press to erase the end ID.

5 SKIP ID buttons
WRITE: Press at the beginning of the portion you may wish to skip later. A skip ID will be written from the point where you pressed this button.
ERASE: Press to erase the nearest skip ID which is before the current position.

6 START ID buttons
AUTO: Press to turn on and off the AUTO indicator. When the AUTO indicator is lit, the start ID will automatically be written during recording. When the AUTO indicator is not lit, press the START ID WRITE button at the point where you want to write a start ID.
WRITE: Press to write the start ID at the desired point during recording or playback.
ERASE: Press to erase a start ID. When a start ID and a program number are written on the tape, both codes are simultaneously erased by pressing this button.
RENUMBER: Press to renumber all programs on the tape. When only the start IDs are written, pressing this button will insert the proper program numbers beginning with "1". The tape will rewind and start from the beginning to accomplish this function.

7 INPUT selector
Set according to the signal to be recorded.
ANALOG: For recording from the equipment connected to the LINE IN jacks.
OPTICAL: For recording from the equipment connected to the DIGITAL IN (OPTICAL) jack.
COAXIAL: For recording from the equipment connected to the DIGITAL IN (COAXIAL) jack.

8 REC LEVEL (recording level) control
Adjust the recording level for the analog input signals.
When recording digital signals, it is not necessary to adjust the recording level.

9 BALANCE control
Adjust the recording balance for the analog input signals. When recording digital signals, it is not necessary to adjust the recording balance.

10 Remote sensor
Receives the signal from the remote commander.

11 REC MODE selector
Normally set to the STANDARD position.
When this selector is set to the LONG position, you can record analog input signals or digital signals with 32 kHz in the long play mode.

12 TIMER switch
Normally set to the OFF position. When recording or playing back at the desired time using a commercially available audio timer, set to the REC position or the PLAY position respectively.

13 COUNTER buttons
MODE: Selects the counter display in the display window among the linear counter (tape running time), absolute time, elapsed time of the selection, and total remaining time of tape. Each time you press the button, the display changes sequentially.
RESET: Resets the linear counter to "0M 00S".

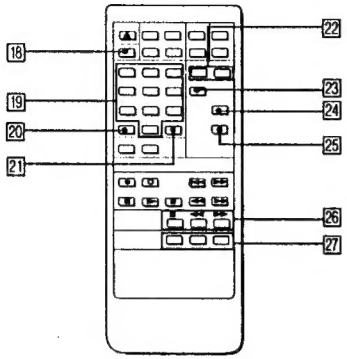
14 ⏏OPEN/CLOSE button
Press to open or close the cassette compartment.

15 Tape operating buttons
■ (stop): Press to stop recording or playback.
► (play): Press to play back the tape.
●REC (recording): Press to enter the record-pause mode. To start recording, press the **II**PAUSE or ► button.
IIPAUSE (pause): Press to stop for a moment during recording or playback. To restart recording or playback, press this button again or press the ► button.
If the unit is left in the pause mode for about 10 minutes, it will automatically be released and the deck will enter the stop mode. To restart recording or playback from the stop mode, press the ●REC or ► button respectively.
○REC MUTE (record muting): Press to insert a sound-muted portion (space).
⏮/⏭ (AMS): Press to locate the beginning of the selection during the playback.
◄◄/►► (rewind/review, fast-forward/cue): In the stop mode, press to rewind/fast-forward the tape. During playback, press to rewind or fast-forward the tape while listening to the sound.

16 Headphones jack
Insert the headphones plug to this jack.

17 PHONE LEVEL control
The PHONE LEVEL control adjusts the headphones volume level.

Identifing Parts and Controls



Front Panel/Remote Commander

18 DISPLAY MODE button
Changes the display mode. (Refer to page 12.)

19 Numeric buttons (0–9)
Designate the desired program number to be played back before starting playback.
Designate the desired number in the record-pause mode, the program number is written consecutively from the designated number.

20 CLEAR button
Use to cancel the program number which has been mistakenly entered.

21 MUSIC SCAN button
Use this feature to listen to the beginning of each selection successively.

22 RMS play buttons
ENTER: To program the selections in a desired order, press this button after pressing the numeric buttons.
CHECK: Press to check the programmed contents.

23 REPEAT 1/ALL button
Press to play a desired portion repeatedly. Each time you press the button, the indicatior changes as follows:
REPEAT 1 → REPEAT ALL → off

24 MARGIN RESET button
Press to reset the margin of peak level.

25 SKIP PLAY button
Press to activate the skip ID code function. The portion of the tape previously marked will be skipped.

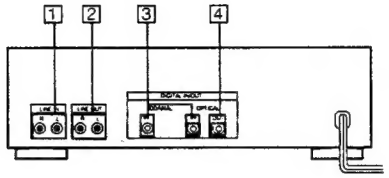
26 CD operation buttons
Operative only for the Sony CD player equipped with a remote commander.
II (pause): Press this button twice to start playback. To enter the pause mode, press this button once.
I◄◄/►►I (AMS): Press to locate the desired selection on the Compact Disc during playback or in the stop mode.

27 CD SYNCHRO (CD synchronized recording) buttons
(The playback of the Sony CD player equipped with a remote commander and the recording of the DAT deck can be performed simultaneously.)
STANDBY: Press to set the unit to the record-standby mode.
START: Press to start recording of the DAT deck and then playback of the CD player.
STOP: Press to stop the DAT deck recording and the CD player playback.

Connections

This section describes about the connecting cords and the analog and digital connections. Select the connection depending on your equipment connected with this unit.

Rear Panel Jacks



1 LINE IN (line input) jacks (phono jack)
Connect to the recording outputs of an amplifier. Signals supplied by the amplifier can be recorded using the sampling frequency of 48 kHz in the standard play mode or 32 kHz in the long play mode.

2 LINE OUT (line output) jacks (phono jack)
Connect to the DAT or tape inputs of an amplifier. The playback signal of this deck will be output.

3 COAXIAL/OPTICAL DIGITAL IN (digital input) jacks (coaxial phono jack/optical jack)
Connect to the digital outputs of an amplifier having a built-in D/A converter or other digital source, such as a CD player for digital-to-digital recording.

4 OPTICAL DIGITAL OUT (digital output) jack (optical jack)
Connect to the digital inputs of an amplifier having a built-in D/A converter or another DAT deck, for playback of a DAT cassette or digital-to-digital recording.

Notes on connection
- Use the connecting cords specified in the illustrations.
- Turn off the power for all equipments before making connections.
- Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise. When unplugging, grasp the plug and not the cord.

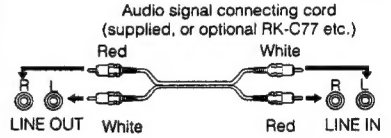
Notes on the optical cable
- Do not bend the cord. When the cord is not used, curl it with a diameter of more than 15 cm (5 7/8 inches).
- Do not use it under high temperatures.
- When the optical cable is not connected, cover the OPTICAL IN/OUT jacks with the supplied caps.

Note on sound signals
When connecting an optical cable to the DIGITAL IN/ DIGITAL OUT jacks, sound signals (L/R) are transmitted together through the cable.

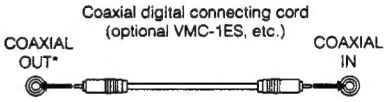
Connecting Cords

There are following three types of connecting jacks at the rear of the deck. Each type of jack requires a different type of connecting cord.

The LINE IN/OUT (analog input/output) jacks

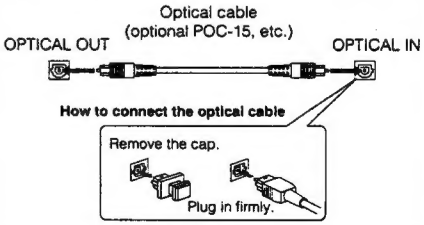


The COAXIAL IN (digital input) jack



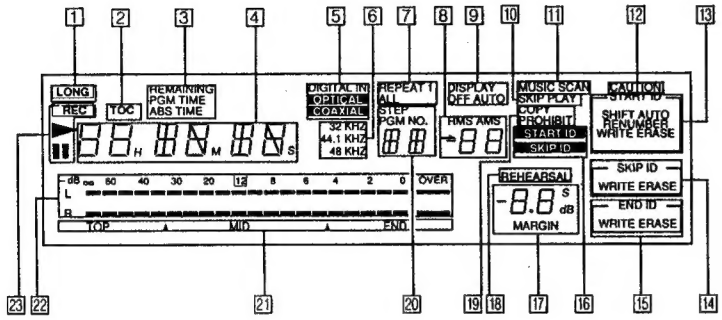
* This unit is not equipped with the COAXIAL OUT jack.

The OPTICAL IN/OUT (optical transmission digital input/output) jacks



Identifing Parts and Controls

Display Window



The following functions can be performed only with the remote commander.

To turn off the display window
When the power is turned on, the display window is also turned on. During recording or playback, all display or some parts of the display can be turned off.
Each time you press the DISPLAY MODE button, the indicators change as follows:

Normal indicators ←
↓
Peak level meters and margin indicators go off.
(The DISPLAY OFF indicator lights.)
↓
All the indicators go off during recording or playback*.
(The DISPLAY OFF AUTO indicator lights momentarily just before the indicators go off.)

When pressing the DISPLAY MODE button except during recording or playback, the DISPLAY OFF AUTO indicator lights. In this case, all the indicators go off immediately after recording or playback starts.

To change the brightness of the display window
While pressing the COUNTER MODE button, press one of the numeric buttons 1, 2 and 3. The greater number pressed, the darker the display window becomes.

1 LONG play mode indicator
Lights when recording or playback is being performed in the long play mode.

2 TOC (Table Of Contents) indicator
When a pre-recorded DAT cassette is played back, this indicator will light.

3 REMAINING (remaining time): Lights when the counter shows the remaining time of the tape.
PGM TIME (program time): Lights when the counter shows the elapsed time of the current selection.
ABS TIME (absolute time) indicator: Lights when the counter shows the elapsed time from the beginning of the tape.

4 Time indicator
Indicates the tape running time, absolute time, elapsed time of the current selection or remaining time. Each time the COUNTER MODE button is pressed, the display is changed.

5 INPUT selector indicators
The OPTICAL or COAXIAL indicator lights according to the position of the INPUT selector. No indicator lights when the INPUT selector is set to the ANALOG position.

6 Sampling frequency indicator
48 kHz: For recording/playback of analog input signals (standard mode)
44.1 kHz: For recording/playback of CD or a pre-recorded DAT cassette
32 kHz: For recording/playback of analog input signals (long-play mode)

7 REPEAT indicators
REPEAT 1: Lights when a desired selection is played back repeatedly.
REPEAT ALL: Lights when all the selections are played back repeatedly.

8 AMS (Automatic Music Sensor)/RMS (Random Music Sensor) indicators
Show the number of selections to be skipped ahead or behind in the AMS operation. When designating a selection directly by the numeric button and the ► button, the display shows the program number of the target selection while the selection is being searched for. When programming the desired selections in the RMS operation (page 33), the display shows the program number of the selection to be programmed.

9 DISPLAY OFF/AUTO indicators
The DISPLAY OFF indicator lights when peak level meters and margin indicators are turned off. The DISPLAY OFF AUTO indicator lights momentarily before all the indicators are turned off.

10 SKIP PLAY indicator
When this indicator is lit during playback, the portion marked by the skip ID is skipped and playback continues from the next start ID.

11 MUSIC SCAN indicator
Lights after pressing the MUSIC SCAN button to listen to the beginning of each selection successively.

12 CAUTION indicator
Lights when moisture condensation occurs. If this happens, the deck stops functioning automatically. (See page 3.)

13 START ID mode indicators
AUTO: Lights when the AUTO button is pressed to write the start ID automatically.
RENUMBER: Lights when the RENUMBER button is pressed to renumber the program numbers.
WRITE: Lights when writing the start ID manually.
ERASE: Lights when erasing the start ID.
AUTO RENUMBER: Lights when renumbering program numbers automatically.
SHIFT RENUMBER: Lights when shifting the start ID and program number position.

14 SKIP ID mode indicator
WRITE: Lights when writing the skip ID.
ERASE: Lights when erasing the skip ID.

15 END ID mode indicator
WRITE: Lights when writing the end ID.
ERASE: Lights when erasing the end ID.

16 START ID indicator: Flashes when writing (for 9 or 18 seconds), erasing a start ID code, and lights when the start ID is detected during playback.
SKIP ID indicator: Lights when writing (for 1 or 2 seconds) or erasing a skip ID code or when the skip ID is detected during playback.

17 MARGIN indicator
Shows how much margin there is between the peak level of input audio signal and 0 dB.

18 REHEARSAL indicator
Lights while the rehearsal function is activated (page 23).

19 COPY PROHIBIT indicator
Lights when recording the digital signal with the copy prohibit code. In this case, record with the LINE IN jacks.

20 STEP/PGM NO. indicator
Shows the program number of the selection being played. When programming the desired selection in the RMS operation (page 33), the display shows the step number of the programmed selection.

21 Frequencies map
When pressing the 4 button while keeping the COUNTER MODE button pressed, bars indicating the sampling frequencies with which the tape was recorded appear on the peak level meters.

22 Peak level meters
Indicate the level of the audio signal being recorded during recording, and the peak values of the audio signal recorded on the tape during playback.

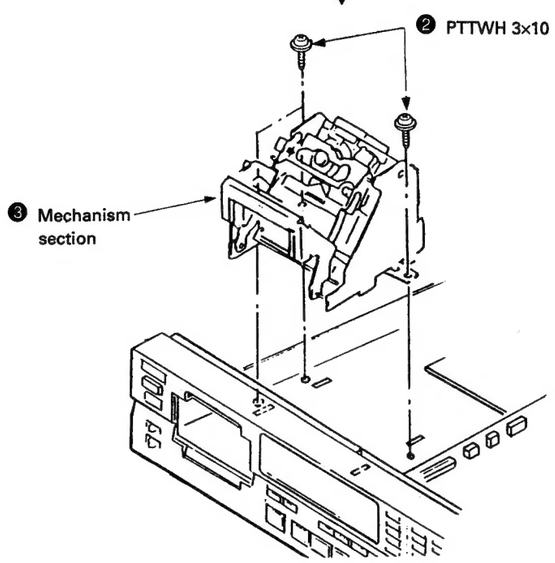
23 Tape operation indicators
REC : Lights during recording or in the record-pause mode.
►: Lights during recording or playback. It also lights in the record-pause mode or in the play-pause mode.
II: Lights in the record-pause mode or in the play-pause mode.

SECTION 2
DISASSEMBLY

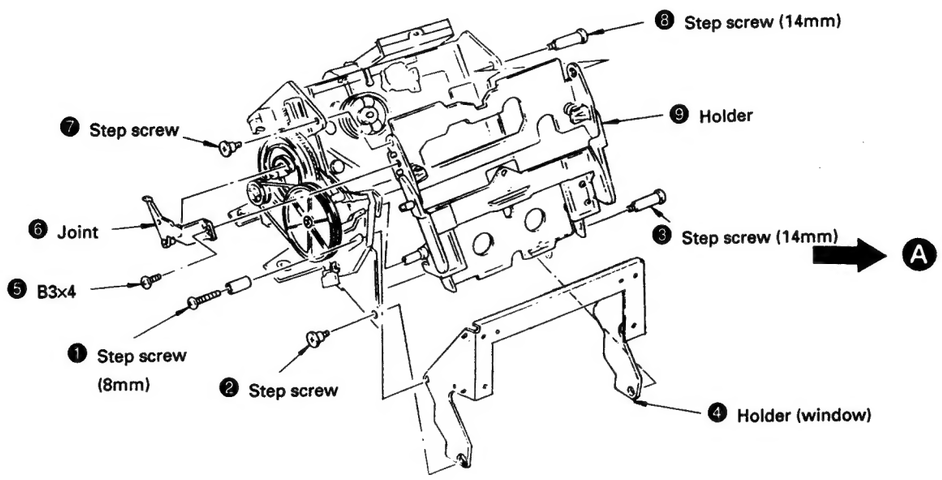
- **Remove the following devices shown by ❶, etc. In the order of the numbers.**

[CASE]	[CASSETTE WINDOW]
Unscrew the four case attachment screws and remove the case.	❶ Press the OPEN/CLOSE switch to effect LOADING OUT STATE (if power is not supplied) rotate the pulley in the left side of the Mechanism Deck counterclockwise.) ❷ Remove the cassette by lifting the window up.

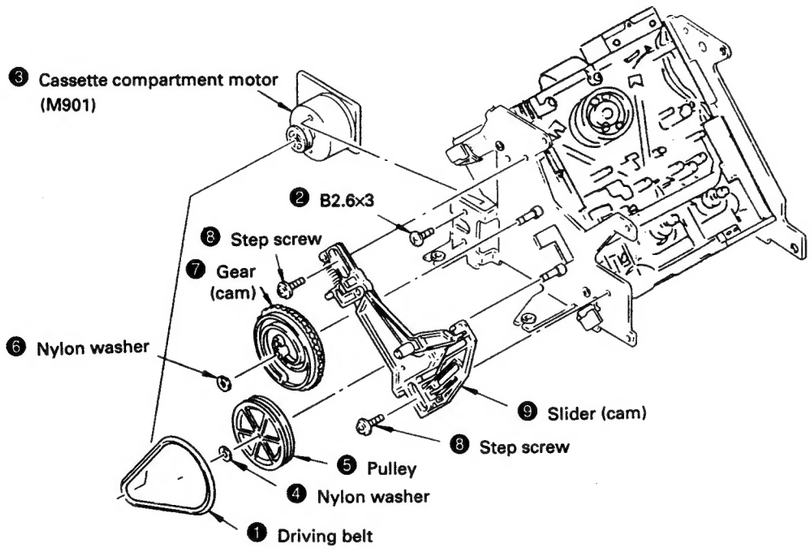
MECHANISM SECTION



HOLDER



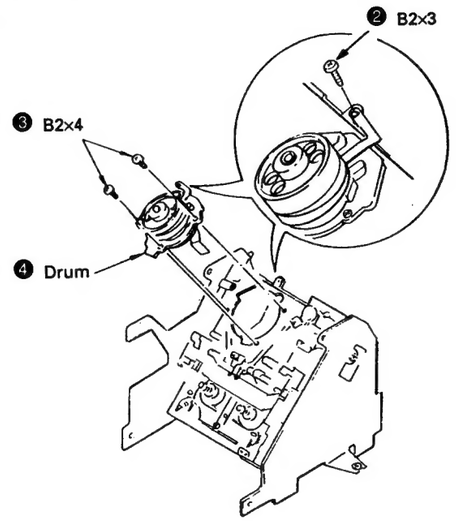
CASSETTE COMPARTMENT MOTOR (M901), PULLEY, GEAR (CAM) AND SLIDER



Ⓐ

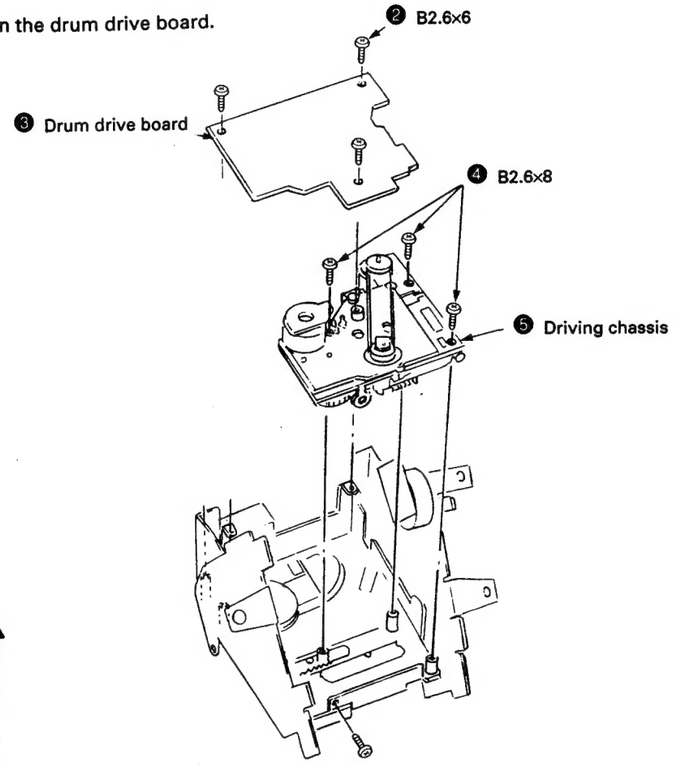
DRUM

❶ Remove the drum lead wires on rear side of the drum from the connector.



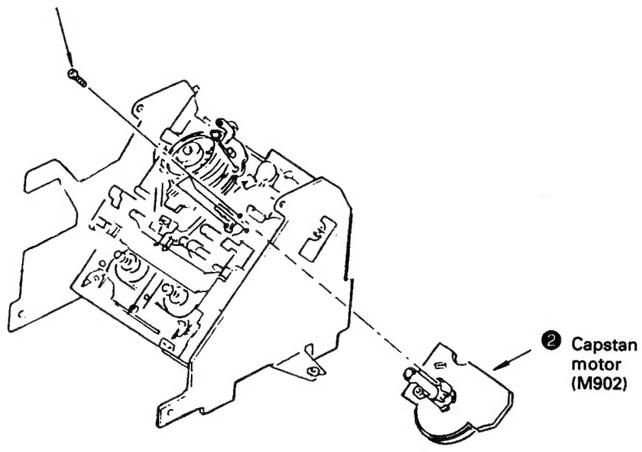
DRUM DRIVE BOARD, DRIVING CHASSIS

❶ Remove the connector on the drum drive board.



CAPSTAN MOTOR (M902)

❶ Precision screw M1.7×4



SECTION 3
ADJUSTMENTS

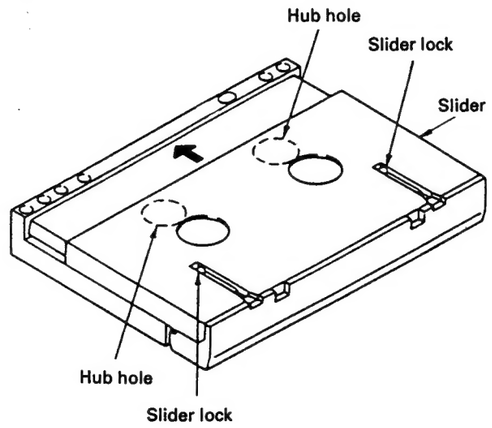
Notes When Making Adjustments

1. Adjustments should be performed in the order listed.
2. Use the following test tapes :
   TY-7111 (8-909-812-00) ..... Level
   TY-7252 (8-909-822-00) ..... Tracking
   TY-7551 (8-909-814-00) ..... Functions
   TY-30B (8-892-358-00) ..... Blank

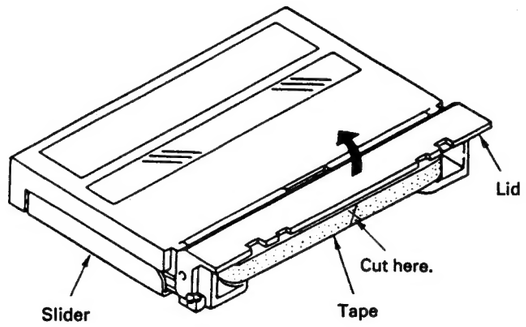
   Use the following torque meter:
   TW-7131 (8-909-708-71) ..... FWD

3. Switches and controls should be set as follows unless otherwise specified.
   TIMER switch : OFF
   REC MODE switch : LONG
   INPUT switch : COAXIAL
   REC LEVEL control : Min.
   PHONES LEVEL control : Min.

4. Creating an end sensor cassette
   (1) Press the tape slider lock and move the slider in the direction indicated by the arrow.



   (2) Open the lid and cut the tape.



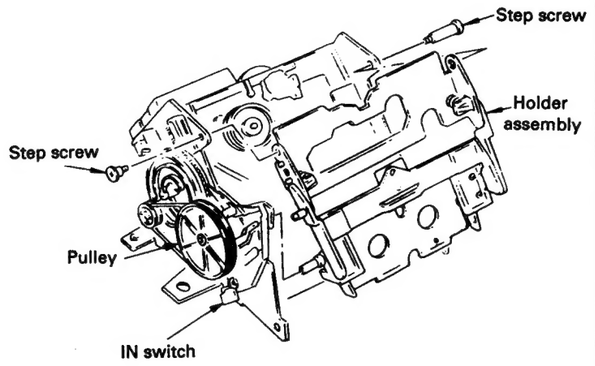
   (3) Turn the hubs until the tape is completely inside the cassette (both T and S sides).
   The end sensor cassette for end sensor adjustment is now ready for use.

5. Cleaning of the Revolving Drum
   (1) Fold a chamois (2-034-697-00) or a knit cloth into 4 or more files, slightly impregnate it with a cleaning liquid (9-919-573-00), and softly touch the drum with it and manually rotate the drum slowly counterclockwise by 2 to 3 turns for cleaning.
   (2) At that time, be careful not to move the chamois vertically to the head tip. Otherwise, the head tip may probably be damaged.

6. Be careful not to move RV1 and RV2 on the RF AMP board in the mechanism assembly.

7. To adjust the tape path and guides, remove the holder assembly as shown in the diagram and use the DAT holder jig (J-8000-002-A). This will make it easier to perform adjustments.

   - First turning the pulley counterclockwise to put it in loading out status will make removal and reattachment of the holder assembly easier.
   - To perform adjustments, turn the pulley clockwise to put it in loading in status, load the cassette tape and set the IN switch to the ON position.



8. Test mode
   The test mode is effected by shorting TP (XTEST MAIN, XTEST SERVO and XTEST DISP) on the main board and the control switch board and GND.
   (1) Test mode (main · servo)
   Turn OFF the power switch, connect XTEST MAIN and XTEST SERVO on the main board to GND and perform the following adjustments.
   - Tape path fine adjustment
   - DPG adjustment
   - ATF pilot (GCA) checking
   - End sensor checking
   - FWD torque checking
   - FWD back tension checking and adjustment

   (2) Test mode (display)
   You can check the following FL display tube and the panel switch by turning OFF the power switch, disconnecting CN932 on the power board, removing flexible board CN752 on the control switch board, connecting XTEST DISP to GND, connecting CN932 again and then turning ON the power switch.

Each grid of the FL display tube sequentially lights up while all tubes being lighted up finally.

⇓

Level meters go out one after one.

⇓

Press any of the remote controller for DAT in this state. Thus, all level meters go out. (It may sometimes occur that one or two meters remain lighting up according to switch setting at that time.)

⇓

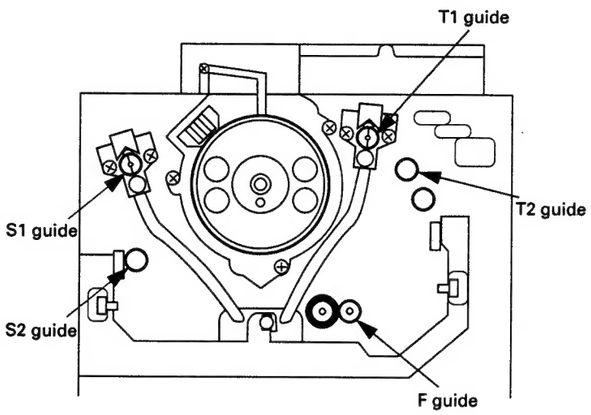
Everytime a switch on the panel is pressed, display tubes light up sequentially one after one. With all keys once pressed, all level meters go out.

- To reset the test mode, disconnect the wire shorting XTEST and GND. After completion of adjusting, be sure to reset the test mode.

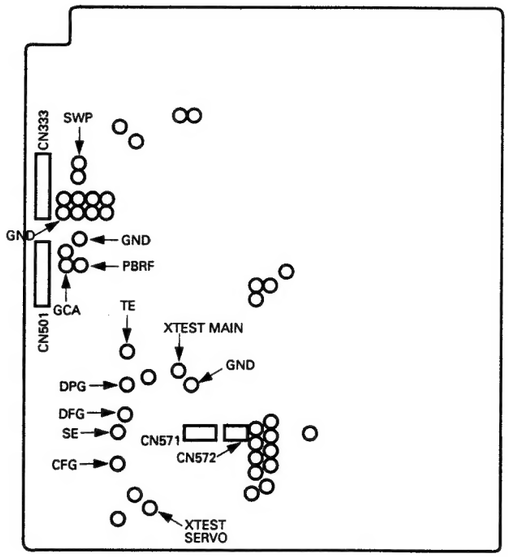
9. Check the following items for correct tape speed, after completion of adjusting.
   (1) Set the REC MODE switch to STANDARD and check for normal recording and playback. (× 1)
   (2) Set the REC MODE switch to LONG and check for normal recording and playback. (× 0.5)
   (3) With QUE (▶ + ▶▶) or REVIEW (▶ + ◀◀), check that qurrr, qurrr sound is heard. (× 3, × 8)
   (4) Check that correct time is displayed after FF (▶▶) or REV (◀◀). (× 16)
   (5) Check that SEARCH (▷▷I, I◁◁) is normal.

Adjust Parts Location

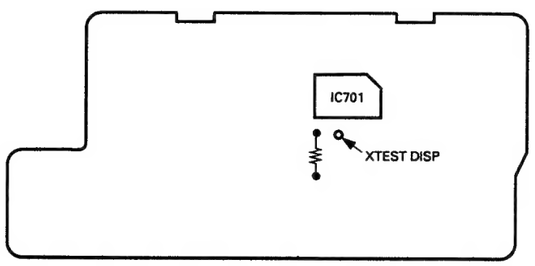
— Mechanism assembly —



— Main board —
(Component side)



— Control sw board —



3-1. ELECTRICAL ADJUSTMENTS

End Sensor Check

Perform the following adjustment when the holder has been removed or part of the mechanism deck section replaced.

Check Procedure:

1. Connect an oscilloscope to the test land SE (in the S side) and TE (in the T side) of the main board.
2. Actuate the test mode (main · servo), mount an end sensor cassette and effect the STOP (■) mode.
3. Check that p-p values of waveform of the oscilloscope satisfy the following.

FWD Torque Check

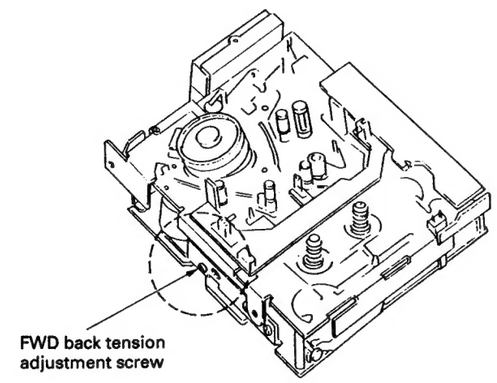
Check Procedure:

1. Put the set into the test mode (main · servo) and load the FWD torque meter TW-7131 (8-909-708-71).
2. Put the set into the PLAY (▶) mode.
3. Confirm that the FWD torque value (take-up side rewinding torque) is between 10 – 20 g·cm (0.14 – 0.28 oz·inch).
4. Confirm that the value indicated by the torque meter is maintained for one full cycle.

FWD Back Tension Check and Adjustment

Check procedure:

1. Put the set into the test mode (main · servo) and load the FWD torque meter TW-7131 (8-909-708-71)
2. Put the set into the PLAY (▶) mode.
3. Confirm that the back tension (supply side) is between 5 – 6 g·cm (0.07 –0.09 oz·inch).
   If this is not satisfied, adjust back tension by rotating the FWD back tension adjustment screw equipped on the side surface of the mechanical deck. After completion of adjusting, be sure to apply screw lock.
4. Confirm that value indicated by the torque meter is maintained for one full cycle.



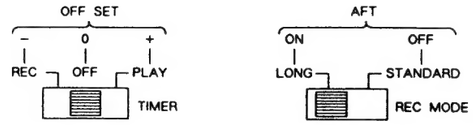
To tighten (clockwise) — back tension becomes larger.
To loosen (counterclockwise) — back tension becomes smaller.

Tape Path Fine Adjustments (× 1.5 FWD Mode)

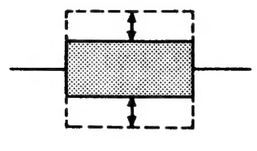
Perform the following adjustment when the drum has been replaced.

Adjustment Procedure :

1. Connect an oscilloscope CH-1 to TP (PBRF) and CH-2 to TP (SWP) on the main board.
2. Put the set into the test mode (main · servo) and load test tape TY-7252 (8-909-822-00).
3. Press the AMS (▷▷I) key.
   Each part of switches on Test Mode.

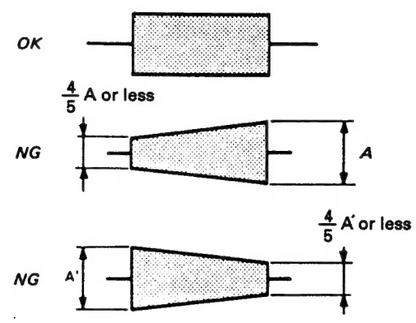


4. With the REC MODE switch set to STANDARD (ATF: OFF) and the TIMER switch set to PLAY or REC (OFFSET: + or –), fine adjust the S1 and T1 guides so that the oscilloscope RF signal waveform remains the same when high-low is repeated.



* Finish the adjustment by screwing in.

5. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the TIMER switch set to PLAY or REC (OFFSET: + or –).



6. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the TIMER switch set to PLAY or REC (OFFSET: 0).
   (1) Confirm theat the RF signal waveform peak value (B) is 60 mV or more.

(2) Confirm
flat port

$\frac{B}{10}$ o

7. When the
repeat item

Adjustment

DPG Adjust
Perform the fo
been replaced.

Adjustment
1. Connect os
on the mai
signal is inv
2. Put the set i
7252 (8-90
3. Set the REC
switch to O
4. Press the A
5. Press the
the oscillos
(Hold the
perform ro
0.2 seconds

ATF Pilot (G
Perform this
cassette.

Check Proced
1. Connect os
CH-2 to TP
inverted, th

2. Put the set i
7111 (8-90

Mode)
has been replaced.

) and CH-2 to TP

l load test tape TY-

OFF
– STANDARD
REC MODE

ARD (ATF: OFF)
OFFSET: + or –),
lloscope RF signal
s repeated.

MODE switch set
t to PLAY or REC

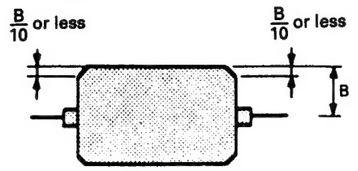
A

4/5 A or less

MODE switch set
t to PLAY or REC

ık value (B) is 60

(2) Confirm that the undershoot level of the RF signal waveform's flat portion is within 10%.



7. When the measured values are not within the above tolerance repeat items 3 – 6 above.

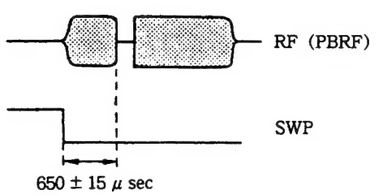
Adjustment Point: mechanism assembly

DPG Adjustment

Perform the following adjustment without fail when the drum has been replaced.

Adjustment Procedure:

1. Connect oscilloscope CH-1 to TP (PBRF) and CH-2 to TP (SWP) on the main board. (Use CH-2 as the trigger. When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode (main · servo) and load test tape TY-7252 (8-909-822-00).
3. Set the REC MODE switch to LONG (ATF: ON) and the TIMER switch to OFF (OFFSET: 0).
4. Press the AMS (▷▷|) key.
5. Press the ◀◀ and ▶▶ keys as appropriate so that the gap between the oscilloscope SWP and RF signals becomes 650 ± 15 µsec. (Hold the ◀◀ and ▶▶ keys down for more than 1 second to perform rough adjustment. Hold them down for approximately 0.2 seconds for fine adjustment.)

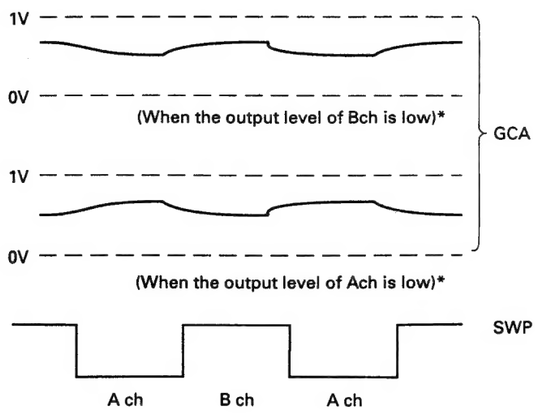


ATF Pilot (GCA) Check

Perform this adjustment after cleaning the heads with a cleaning cassette.

Check Procedure:

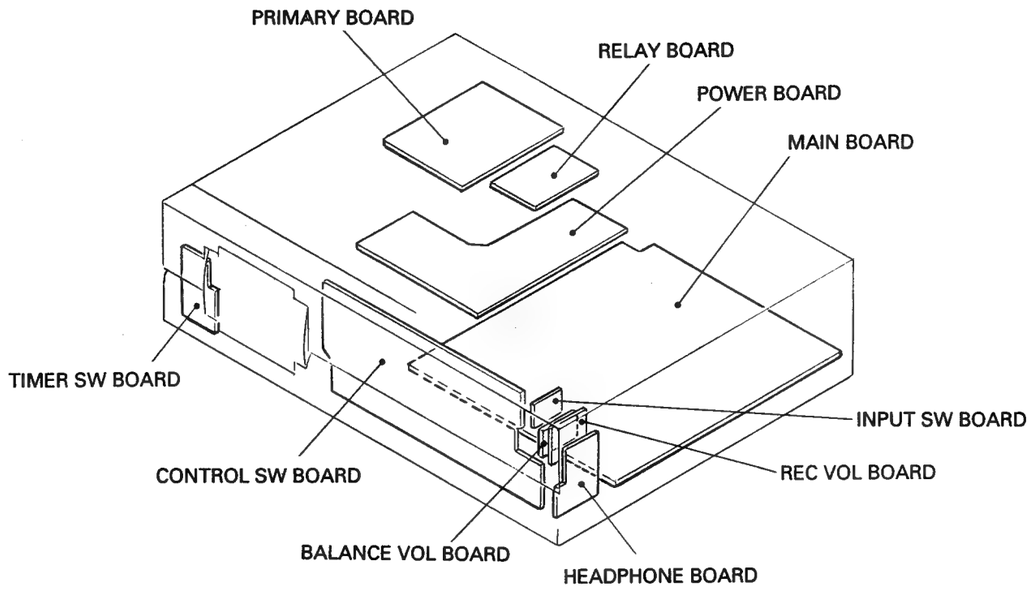
1. Connect oscilloscope CH-1 to TP (GCA: Gain Control Amp.) and CH-2 to TP (SWP) on the main board. (When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode (main · servo) and load test tape TY-7111 (8-909-812-00).
3. Actuate the PLAY (▶) mode and check that the GCA waveform on the oscilloscope is as follows.

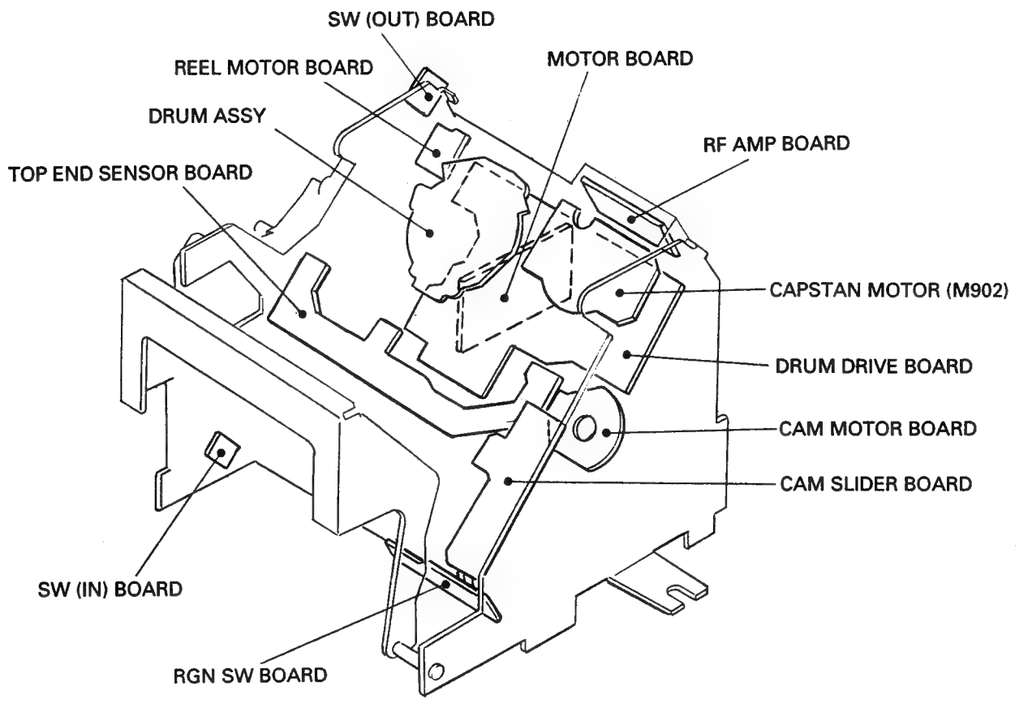


* Slightly changes depending on the state of the head. NG if the GCA waveform is 1V or more or equal to the GND level.

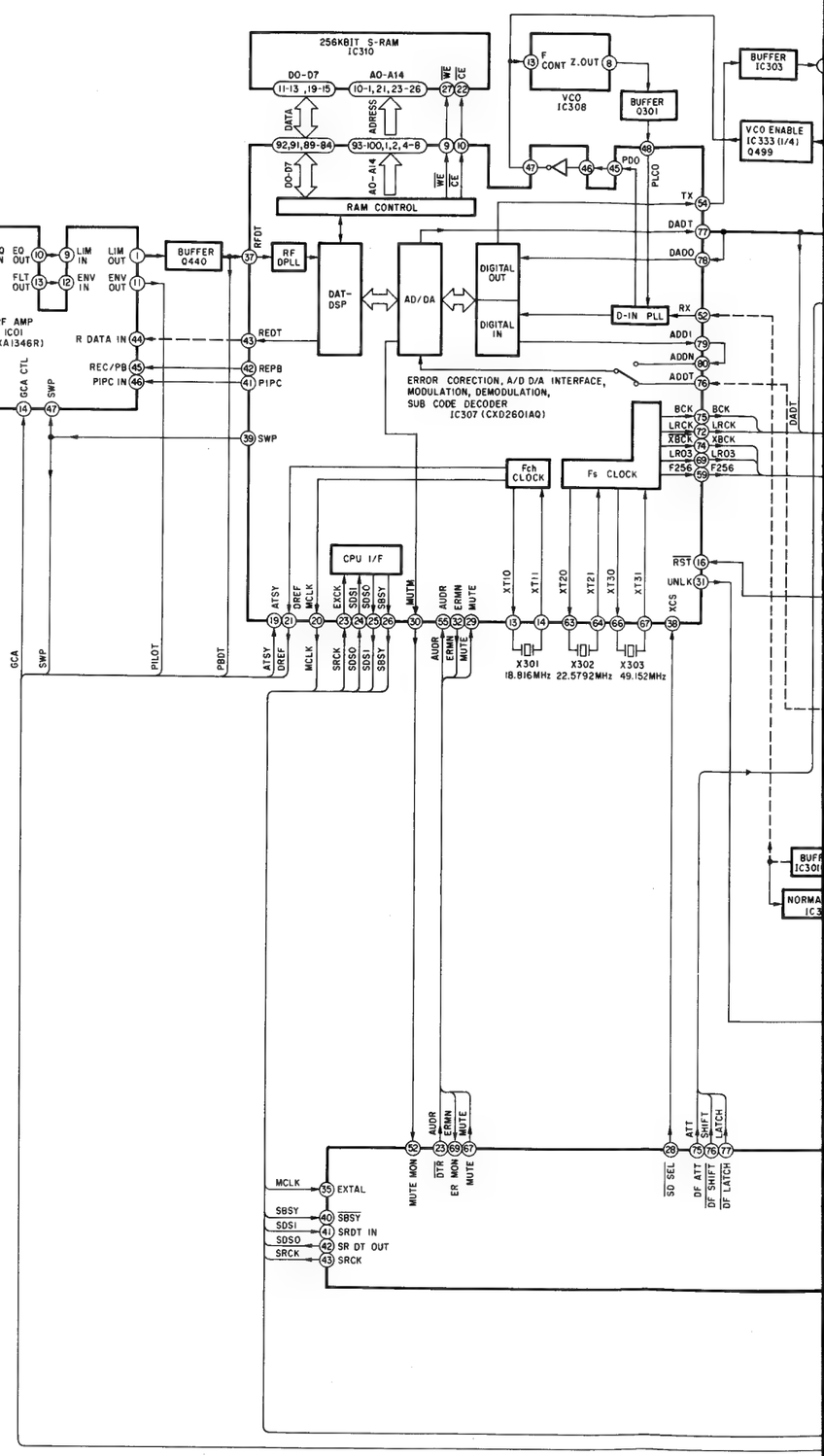
SECTION 4
DIAGRAMS

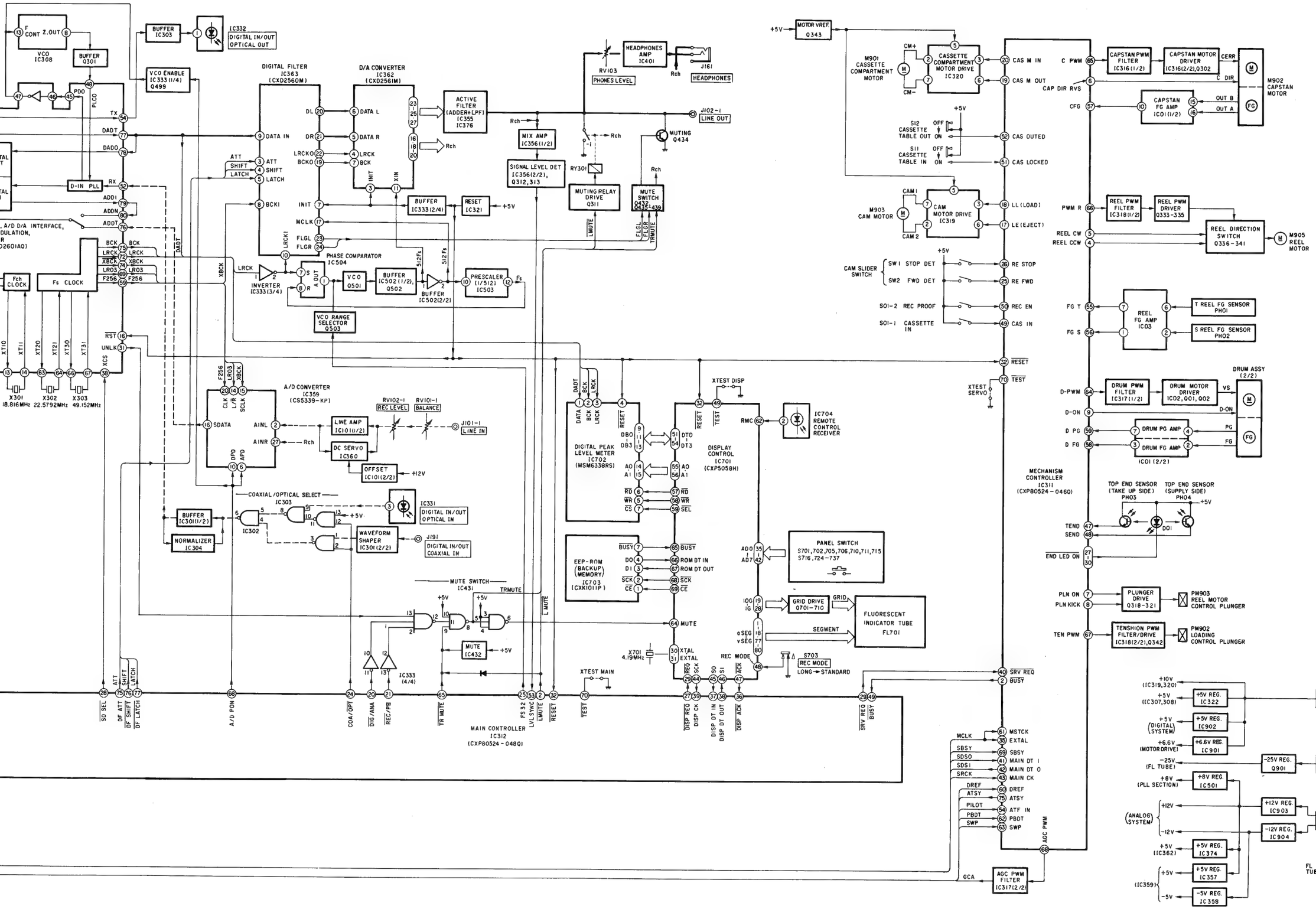
4-1. CIRCUIT BOARDS LOCATION





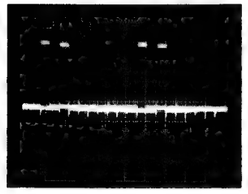
4-2. BLOCK DIAGRAM



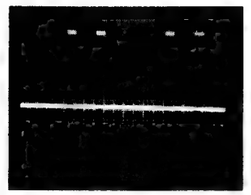

VCO IC308
BUFFER Q301
BUFFER IC303
IC332 DIGITAL IN/OUT OPTICAL OUT
VCO ENABLE IC333(1/4) Q499
DIGITAL FILTER IC363 (CXD2560M)
D/A CONVERTER IC362 (CXD2561M)
ACTIVE FILTER (ADDER+LPF) IC355 IC376
HEADPHONES AMP IC401
RV103 PHONES LEVEL
J161 HEADPHONES
J102-1 LINE OUT
MIX AMP IC356(1/2)
MUTING Q434
SIGNAL LEVEL DET IC356(2/2), Q312,313
RY301
MUTING RELAY DRIVE Q311
MUTE SWITCH Q432, Q435-439
D-IN PLL
A/D D/A INTERFACE, MODULATION, R CXD2601AQ)
Fch CLOCK
Fs CLOCK
X301 18.816MHz
X302 22.5792MHz
X303 49.152MHz
BUFFER IC333(2/4)
RESET IC321
+5V
PHASE COMPARATOR IC504
VCO Q501
BUFFER IC502(1/2), Q502
BUFFER IC502(2/2)
PRESCALER (1/512) IC503
INVERTER IC333(3/4)
VCO RANGE SELECTOR Q503
A/D CONVERTER IC359 (CS5339-KP)
RV102-1 REC LEVEL
RV101-1 BALANCE
J101-1 LINE IN
LINE AMP IC101(1/2)
DC SERVO IC360
OFFSET IC101(2/2)
+12V
COAXIAL/OPTICAL SELECT IC303
IC331 DIGITAL IN/OUT OPTICAL IN
BUFFER IC301(1/2)
NORMALIZER IC304
IC302
WAVEFORM SHAPER IC301(2/2)
J191 DIGITAL IN/OUT COAXIAL IN
MUTE SWITCH IC431
MUTE IC432
IC333 (4/4)
DIGITAL PEAK LEVEL METER IC702 (MSM6338RS)
DISPLAY CONTROL IC701 (CXP5058H)
XTEST DISP
IC704 REMOTE CONTROL RECEIVER
EEP-ROM (BACKUP) (MEMORY) IC703 (CXK1011P)
PANEL SWITCH S701,702,705,706,710,711,715 S716,724-737
GRID DRIVE Q701-710
FLUORESCENT INDICATOR TUBE FL701
X701 4.19MHz
S703 REC MODE LONG→STANDARD
XTEST MAIN
MAIN CONTROLLER IC312 (CXP80524-048Q)
MOTOR VREF Q343
M901 CASSETTE COMPARTMENT MOTOR
CASSETTE COMPARTMENT MOTOR DRIVE IC320
CAS M IN
CAS M OUT
SI2 CASSETTE TABLE OUT
SI1 CASSETTE TABLE IN
CAS OUTED
CAS LOCKED
M903 CAM MOTOR
CAM MOTOR DRIVE IC319
LL (LOAD)
LE (EJECT)
CAM SLIDER SWITCH
SW1 STOP DET
SW2 FWD DET
RE STOP
RE FWD
SO1-2 REC PROOF
SO1-1 CASSETTE IN
REC EN
CAS IN
RESET
TEST
XTEST SERVO
MECHANISM CONTROLLER IC311 (CXP80524-046Q)
C PWM
CAPSTAN PWM FILTER IC316(1/2)
CAPSTAN MOTOR DRIVER IC316(2/2),Q302
CERR
C DIR
CAP DIR RVS
CFG
CAPSTAN FG AMP IC01(1/2)
OUT B
OUT A
M902 CAPSTAN MOTOR
PWM R
REEL PWM FILTER IC318(1/2)
REEL PWM DRIVER Q333-335
REEL CW
REEL CCW
REEL DIRECTION SWITCH Q336-341
M905 REEL MOTOR
FG T
FG S
REEL FG AMP IC03
T REEL FG SENSOR PH01
S REEL FG SENSOR PH02
DRUM ASSY (2/2)
D-PWM
DRUM PWM FILTER IC317(1/2)
DRUM MOTOR DRIVER IC02,001,002
VS
D-ON
D PG
D FG
DRUM PG AMP
DRUM FG AMP
IC01(2/2)
TOP END SENSOR (TAKE UP SIDE) PH03
TOP END SENSOR (SUPPLY SIDE) PH04
DO1
TEND
SEND
END LED ON
PLN ON
PLN KICK
PLUNGER DRIVE Q318-321
PM903 REEL MOTOR CONTROL PLUNGER
TEN PWM
TENSHION PWM FILTER/DRIVE IC318(2/2),Q342
PM902 LOADING CONTROL PLUNGER
AGC PWM FILTER IC317(2/2)
GCA
+10V (IC319,320)
+5V (IC307,308)
+5V (DIGITAL) SYSTEM
+6.6V (MOTOR DRIVE)
-25V (FL TUBE)
+8V (PLL SECTION)
+5V REG. IC322
+5V REG. IC902
+6.6V REG. IC901
-25V REG. Q901
+8V REG. IC501
RECT D905
RECT D907,908
RECT D911-914
+12V REG. IC903
-12V REG. IC904
+5V REG. IC374
+5V REG. IC357
-5V REG. IC358
(ANALOG) SYSTEM
(IC362)
(IC359)
T901 POWER TRANSFORMER
S901 POWER
AC IN
FL TUBE
VF
VF

4-3. WAVEFORMS

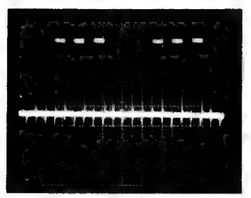
❶ FL701 ⑪-⑳pin (1G-10G)
32Vp-p, 2.5ms



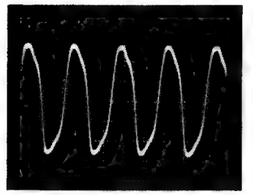
❷ IC701 ⑲-㉘pin (10G-1G)
34Vp-p, 2.45ms



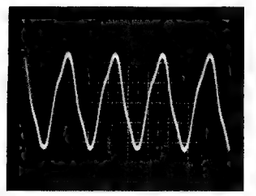
❸ IC701 ㉗-㉚pin, ①-⑱pin (a-v)
38Vp-p, 1.2ms



❹ IC701 ㉚piN (XTAL)
5.5Vp-p, 2.5µs

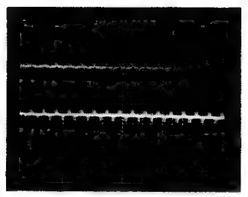


❺ IC701 ㉛pin (EXTAL)
5Vp-p, 2.5µs

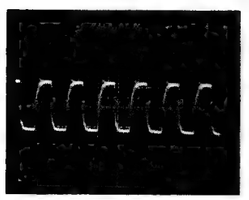


❻ IC701 ㊻pin, IC312 ㊳pin (SI)
5.2Vp-p, 0.64ms

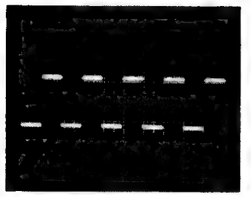
❼ IC702 ①pin (DATA)
6.4Vp-p, 0.3µs



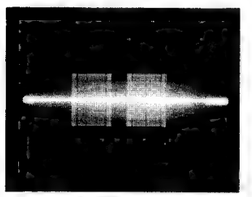
❽ IC702 ②pin (BCK)
5.2Vp-p, 0.3µs



❾ IC702 ③pin (LRCK)
5.7Vp-p, 20µs

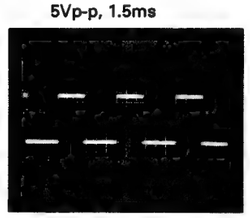


❿ IC01 ㉗,㉝pin (HEAD) REC mode
4.2Vp-p

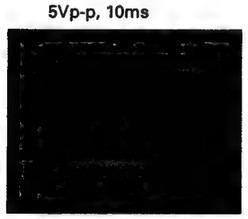


⓫ IC01 ①,⑦pin,IC311 ㊺,㊻pin(FGT,FGS) FF,REW mode
3.6Vp-p, 0.1ms

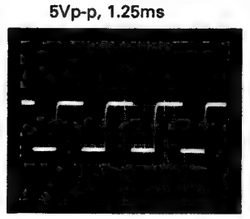
⓬ IC01 ⑩pin, IC311 ㊼pin (CFG) PLAY mode
5Vp-p, 1.5ms



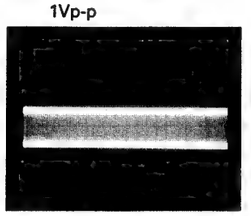
⓭ IC01 ⑦pin, IC311 ㊾pin (DPG) PLAY mode
5Vp-p, 10ms



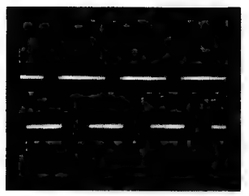
⓮ IC01 ③pin, IC311 ㊽pin (DFG) PLAY mode
5Vp-p, 1.25ms



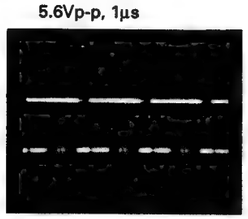
⓯ IC01 ①pin,Q440 Base (PBDT) PLAY mode
1Vp-p



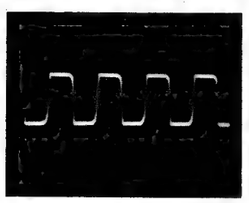
⓰ IC307 ㊽pin (DADO)
5.2Vp-p, 5µs



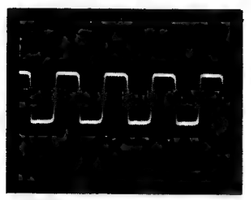
⓱ IC307 ㊻pin, IC359 ⑯pin (ADDT) REC mode
5.6Vp-p, 1µs



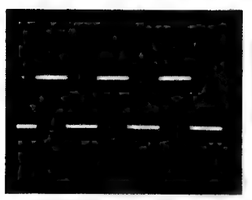
⓲ IC307 ㊺pin (BCK)
5.2Vp-p, 0.3µs



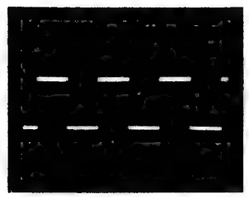
⓳ IC307 ㊹pin, IC359 ⑮pin (XBCK)
6.4Vp-p, 0.48µs



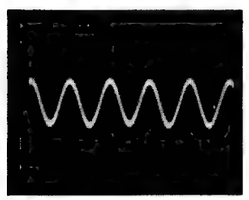
⓴ IC307 ㊷pin (LRCK)
5.6Vp-p, 32µs



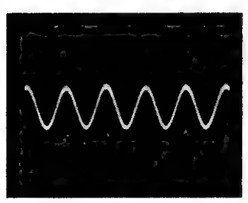
㉑ IC307 ㊾pin,IC359 ⑭pin (LR03)
5.6Vp-p, 32µs



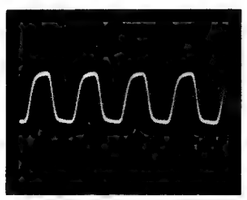
㉒ IC307 ㊼pin (XT3I)
0.9Vp-p, 0.2µs



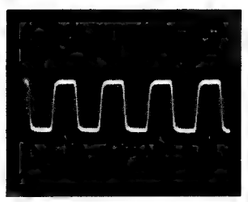
㉓ IC307 ㊸pin (XT3O)
2.9Vp-p, 0.2µs



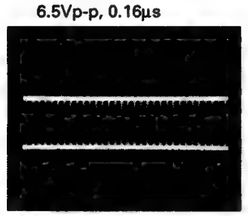
㉔ IC307 ㊴pin (F256)
6.1Vp-p, 85µs



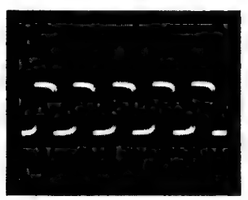
㉕ IC307 ㊽pin (F128)
6.8Vp-p, 0.17µs



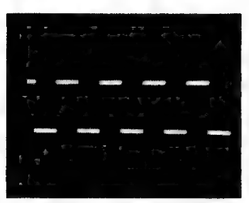
㉖ IC307 ㊹pin (TX) PLAY mode
6.5Vp-p, 0.16µs



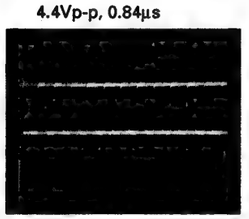
㉗ IC307 ㊷pin (RX)
5.2Vp-p, 0.1ms



㉘ IC307 ㊽pin (PLCO)
4.8Vp-p, 0.18ms

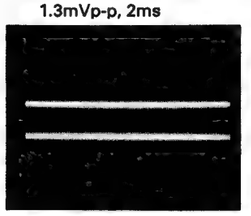


㉙ IC307 ㊸pin (REDT) REC mode
4.4Vp-p, 0.84µs



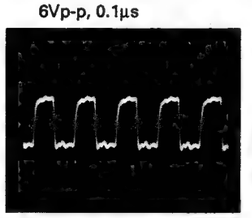
㉚ IC307 ㊾pin, IC311 ㊸pin (SWP) PLAY mode
5.2Vp-p, 30ms

㉛ IC307 ㊼pin (REDT) PLAY mode
1.3mVp-p, 2ms

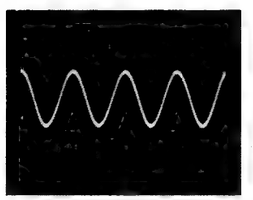


㉜ IC307 ㉑pin, IC311 ㊿pin (DREF)
6Vp-p, 1.75µs

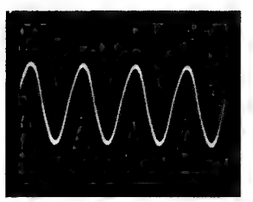
㉝ IC307 ⑳pin, IC311 ㉟,㊶pin IC312 ㉟pin (MCLK)
6Vp-p, 0.1µs



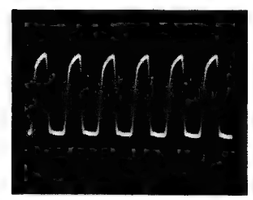
㉞ IC307 ⑭pin (XT1I)
2.8Vp-p, 55ns



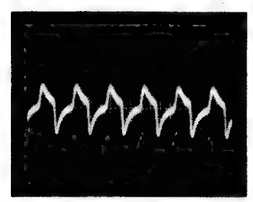
㉟ IC307 ⑬pin (XT10)
4.4Vp-p, 55ns



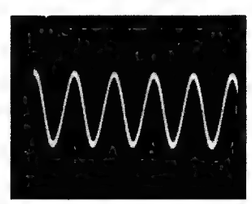
㊱ IC308 ⑧pin (ZOUT)
4.1Vp-p, 0.17µs



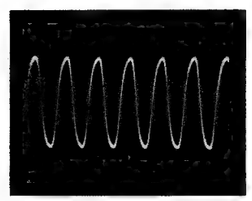
㊲ IC308 ⑬pin (F.C.)
25mVp-p, 0.17µs



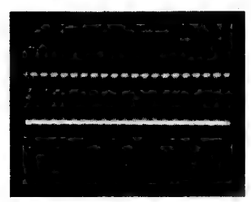
㊳ IC362 ⑪pin, IC502 ①,⑥pin (XIN)
3.8Vp-p, 40ns



㊴ IC362 ⑦pin (BCK)
4.6Vp-p, 80ns

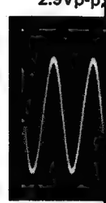


㊵ IC362 ⑥,⑤pin (DATAL, DATAR)
5Vp-p



㊶ IC362 (LRCK)
5Vp-p, 0

㊷ IC363 ⑩pin (MCLK
2.9Vp-p,

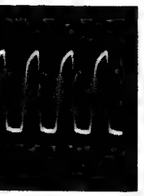


㊸ IC363 ⑦pin (LRCK
5Vp-p, 2

㊹ IC504 ⑫pin (1/512
4Vp-p, 2

㊺ IC501 (VCO)
2.5Vp-p,

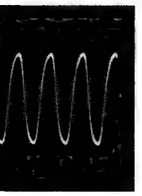
⑧pin
)
0.17µs



⑬pin
p, 0.17µs

⑪pin, IC502
n (XIN)
40ns

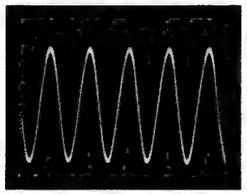
⑦pin
80ns



⑥,⑤pin
L, DATAR)

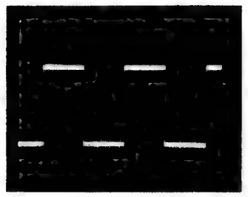
41 IC362 ④pin
(LRCK)
5Vp-p, 0.26µs

42 IC363 ⑰pin, IC503
⑩pin
(MCLK)
2.9Vp-p, 40ns

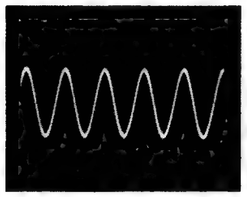


43 IC363 ⑩pin, IC504
⑦pin
(LRCKI)
5Vp-p, 21µs

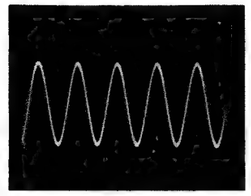
44 IC504 ⑧pin, IC503
⑫pin
(1/512)
4Vp-p, 20.5µs



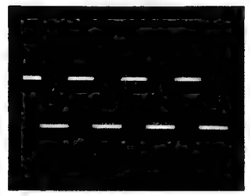
45 IC501 CATHODE
(VCO)
2.5Vp-p, 40ns



46 Q502 SOURCE
(VCO)
2.1Vp-p, 40ns

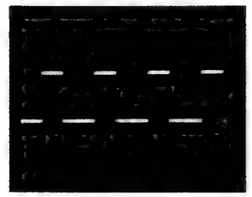


47 IC311 ⑭pin
(D PWM)
PLAYmode
5Vp-p, 0.14µs



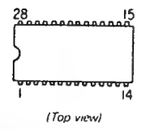
48 IC311 ⑮,⑯pin
(CPWM, PWMR)
PLAY mode
5Vp-p, 28µs

49 IC311 ⑰,⑱pin
(TEN PWM, AGC
PWM) PLAY mode
5Vp-p, 28µs



4-4. SEMICONDUCTOR LEAD LAYOUTS

AK5339



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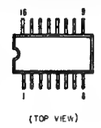

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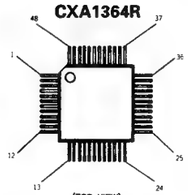

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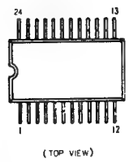

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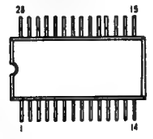

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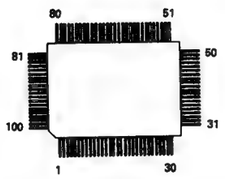

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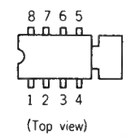

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CXP80524-046Q
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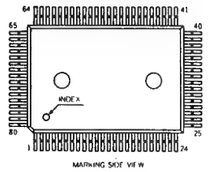

LF412CN/SL161841
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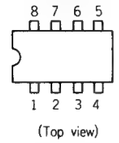
RC4560D-D
µPC358C



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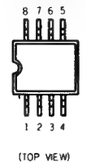

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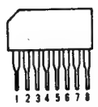

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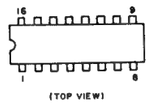

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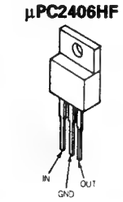

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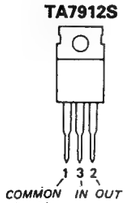

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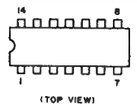

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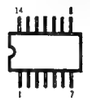

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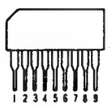

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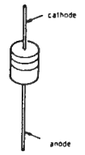

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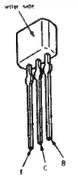

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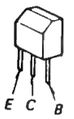

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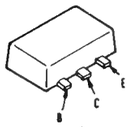

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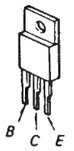

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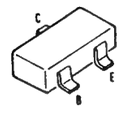

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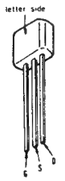
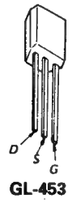
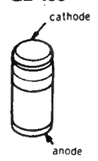


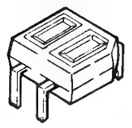
2SK241-GR



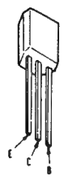
GL-453



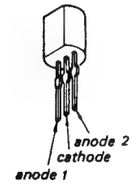
GP2S09-C



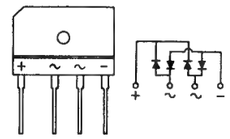
HZS6A1L
HZS24-3L
1SS168
1SS202-1
10E2N
11EQS04
11ES2



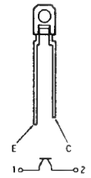
KV1310



RBA406B



PT4850F



4-5. PRINTED WIRING BOARDS

– MD/POWER SUPPLY/DISPLAY SECTION –

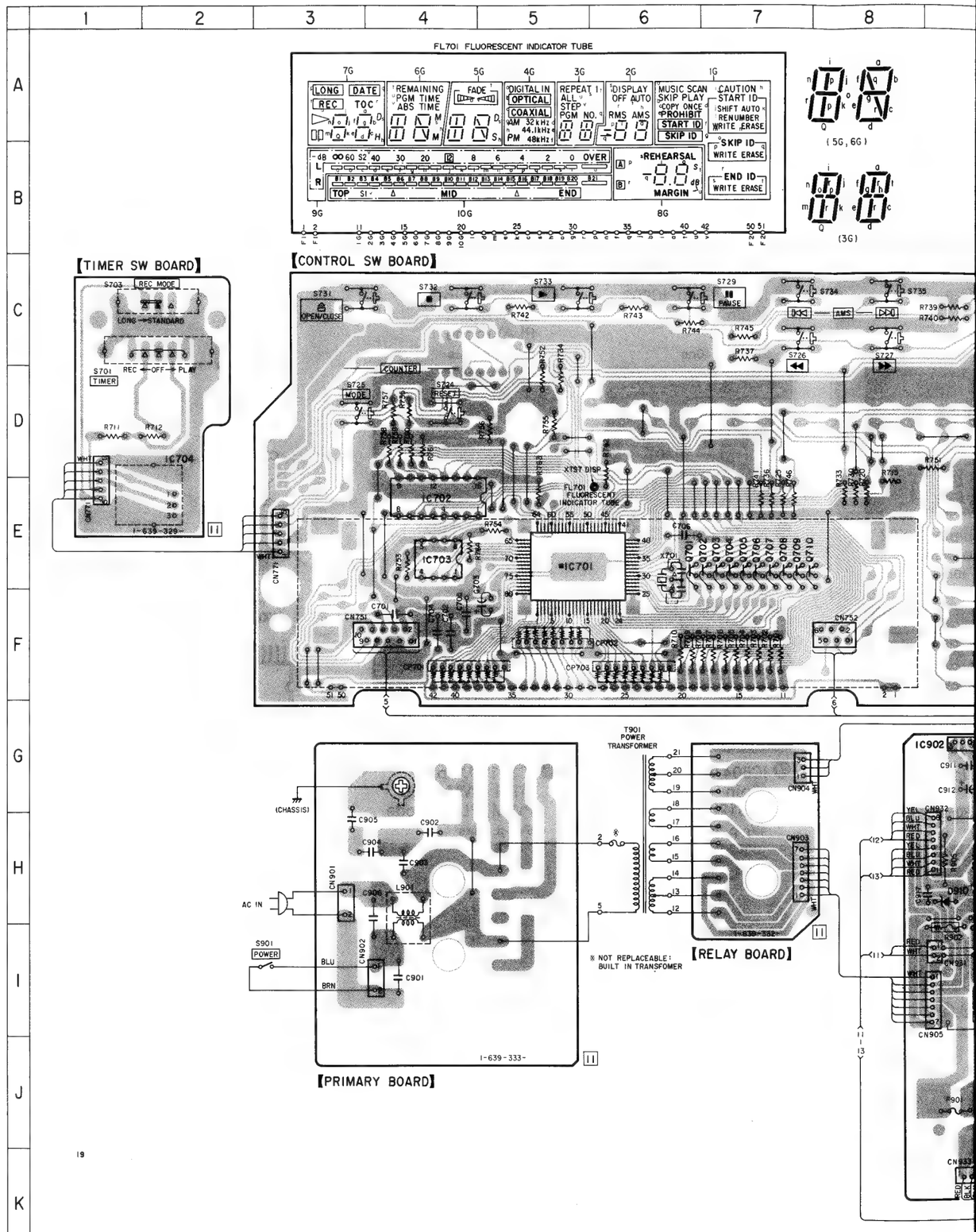
• See page 15 for circuit boards location and 22 for semiconductor lead layouts.

● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D01	G – 23	IC902	G – 9
D905	I – 9		
D906	G – 9	IC903	J – 10
D907	I – 9	IC904	J – 10
D908	H – 9		
D909	H – 9	PH01	H – 20
D910	H – 9	PH02	H – 20
D911	J – 11	PH03	I – 23
D912	K – 11	PH04	F – 23
D913	J – 11		
D914	K – 11	Q01	G – 20
D915	K – 9	Q02	G – 20
D916	K – 9	Q701	E – 6
		Q702	E – 7
		Q703	E – 7
IC1	F – 15		
IC01	F – 19	Q704	E – 7
IC02	F – 20	Q705	E – 7
IC03	H – 21	Q706	E – 7
IC701	E – 5	Q707	E – 7
		Q708	E – 7
IC702	E – 4		
IC703	E – 4	Q709	E – 7
IC704	E – 2	Q710	E – 8
IC901	G – 9	Q901	H – 9

Notes on printed wiring board:

- ○——: indicated a lead wire mounted on the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.



CAUTION
START ID
SHIFT AUTO
RENUMBER
RITE ERASE
SKIP ID
RITE ERASE
END ID
RITE ERASE

(5G, 6G)

(3G)

MECHANISM ASS'Y TOP VIEW

MECHANISM ASS'Y BOTTOM VIEW

【MOTOR BOARD】

【SW(IN) BOARD】

【SW(OUT) BOARD】

【INPUT SW BOARD】

【RF AMP BOARD】(COMPONENT SIDE)

【RF AMP BOARD】(CONDUCTOR SIDE)

【DRUM DRIVE BOARD】

【TOP END SENSOR BOARD】

【POWER BOARD】

【CAM MOTOR BOARD】

【RGN SW BOARD】

【CAM SLIDER BOARD】

【REEL MOTOR BOARD】

TO MAIN SECTION (MAIN BOARD)

(See page 34)

• See page 19 for waveforms, 39 for IC block diagrams and 43 for pin functions.

【CONTROL SW BOARD】

FL701
FLUORESCENT INDICATOR TUBE (BG-933GK)

IC701
CXP5058H
DISPLAY CONTROL

IC702
MSM6338RS
DIGITAL PEAK LEVEL METER

IC703
CXK1011P
BACK UP MEMORY

IC704
GP1U50XB
REMOTE SENSOR

To MAIN BOARD CN572 ④ (See page 37)

To MAIN BOARD CN571 ③ (See page 36)

【TIMER SW BOARD】

【INPUT SW BOARD】 To MAIN BOARD CN501 ① (See page 35)

【MOTOR BOARD】

M901 CASSETTE COMPARTMENT MOTOR

To MAIN BOARD CN308 ⑧ (See page 38)

【SW(IN) BOARD】 CASSETTE TABLE IN S11

【SW(OUT) BOARD】 CASSETTE TABLE OUT S12

【RGN SW BOARD】 S01

Sol-1 CASSETTE IN
Sol-2 REC PROOF

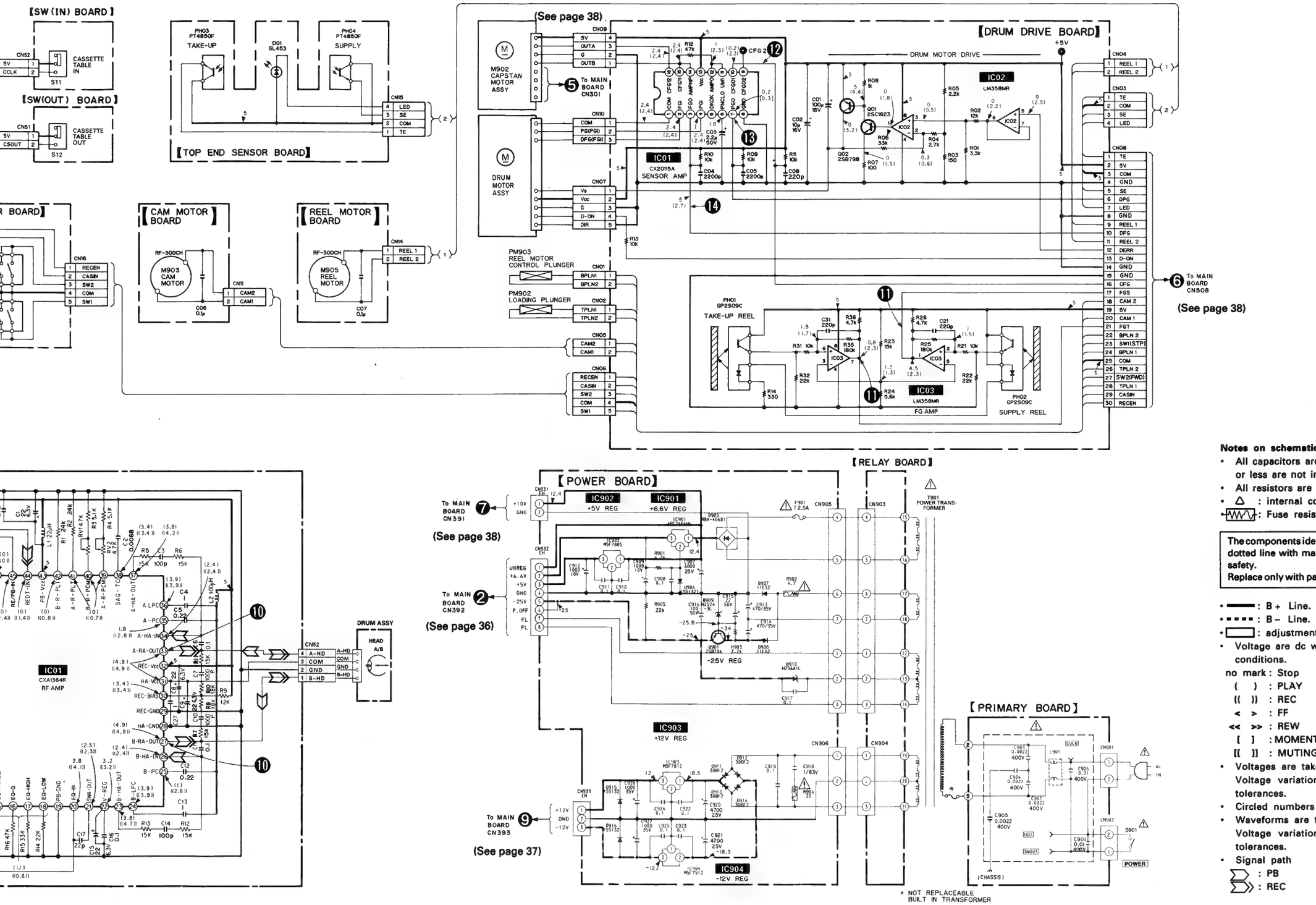
【CAM SLIDER BOARD】 SW2 FWD DET, SW1 STOP DET

【CAM MOTOR BOARD】 M903 CAM MOTOR

【RF AMP BOARD】

IC01
CXA1364R
RF AMP

FL701 FLUORESCENT INDICATOR TUBE



Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : internal component.
- : Fuse resistor

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line.
- ▪▪▪▪ : B− Line.
- ▭ : adjustment for repair.
- Voltage are dc with respect to ground under no-signal (STOP) conditions.
  - no mark : Stop
  - ( ) : PLAY
  - (( )) : REC
  - < > : FF
  - << >> : REW
  - [ ] : MOMENTARILY WHEN ▶▶, ◀◀ and ▶ BUTTON IS PRESSED.
  - [[ ]] : MUTING
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path
  - : PB
  - : REC

4-7. PRINTED WIRING BOARDS – MAIN SECTION –

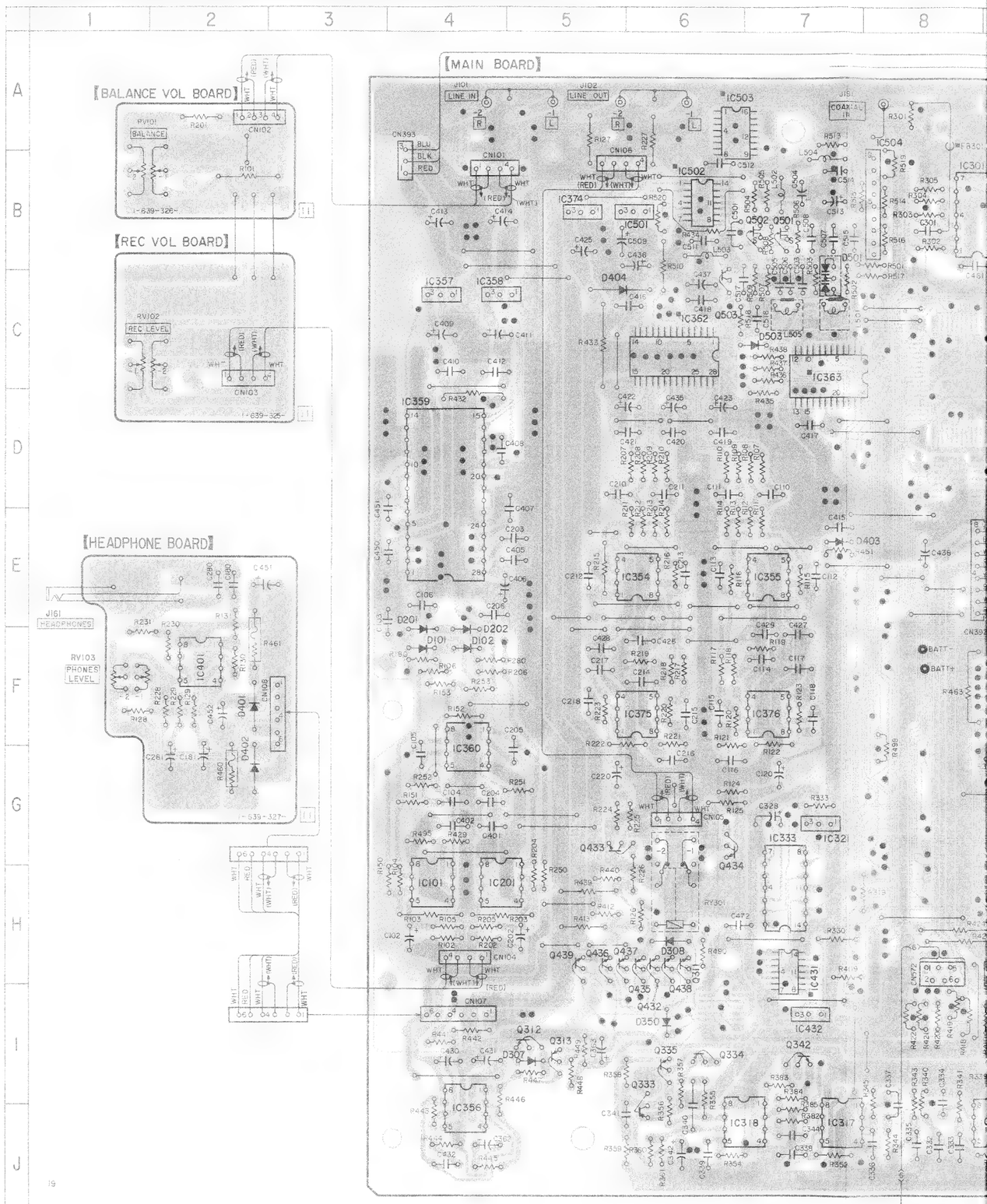
• See page 15 for circuit boards location and 22 for semiconductor lead layouts.

● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D101	F – 4	IC363	C – 7
D102	F – 4	IC374	B – 5
D201	E – 4	IC375	F – 6
D202	E – 4	IC376	F – 7
D306	F – 10	IC401	F – 2
D307	I – 5	IC431	H – 7
D308	H – 6	IC432	I – 7
D314	F – 10	IC501	B – 6
D323	F – 11	IC502	B – 6
D350	I – 6	IC503	A – 6
D401	F – 2	IC504	B – 8
D402	G – 2		
D403	E – 7		
D404	C – 5	Q301	B – 12
D501	C – 7	Q302	I – 9
D503	C – 7	Q311	H – 6
		Q312	I – 5
		Q313	I – 5
IC101	H – 4		
IC201	H – 4	Q318	F – 10
IC301	B – 8	Q319	F – 10
IC302	B – 10	Q320	F – 10
IC303	B – 11	Q321	F – 10
		Q333	I – 6
IC304	B – 9		
IC307	D – 10	Q334	I – 6
IC308	C – 11	Q335	I – 6
IC310	D – 11	Q336	J – 11
IC311	I – 10	Q337	J – 10
		Q338	I – 11
IC312	G – 9		
IC316	J – 9	Q339	I – 11
IC317	J – 7	Q340	I – 11
IC318	J – 6	Q341	J – 11
IC319	F – 11	Q342	I – 7
		Q343	F – 11
IC320	F – 11		
IC321	G – 7	Q432	H – 6
IC322	E – 9	Q433	G – 5
IC331	A – 10	Q434	G – 6
IC332	A – 11	Q435	H – 6
		Q436	H – 5
IC333	H – 7		
IC354	E – 6	Q437	H – 5
IC355	E – 7	Q438	H – 6
IC356	I – 4	Q439	H – 5
IC357	C – 4	Q440	E – 11
		Q499	C – 12
IC358	C – 4		
IC359	D – 4	Q501	B – 7
IC360	F – 4	Q502	B – 7
IC362	C – 6	Q503	C – 6

Notes on printed wiring board:

- ○——: indicated a lead wire mounted on the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.



S – MAIN SECTION –

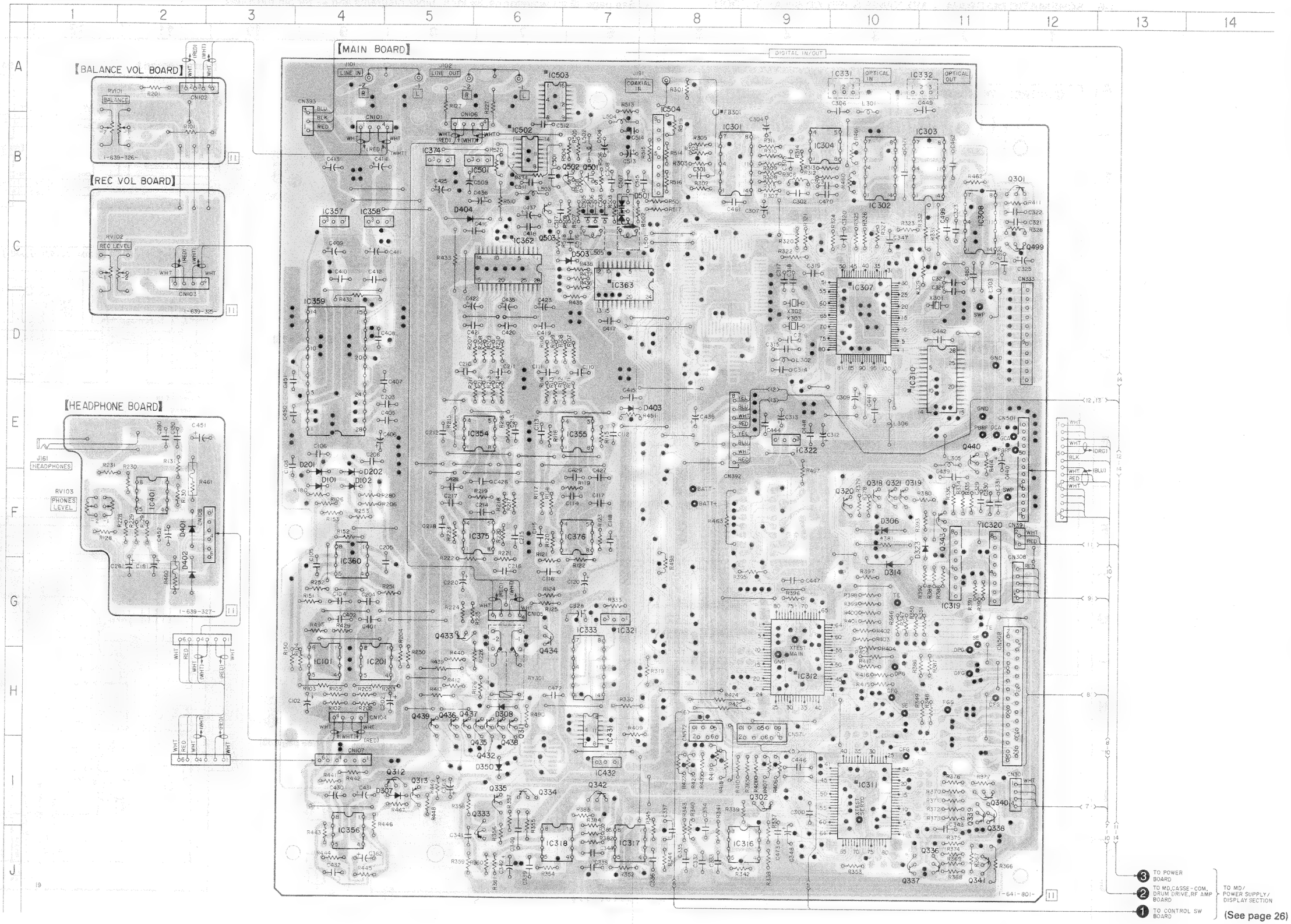
N

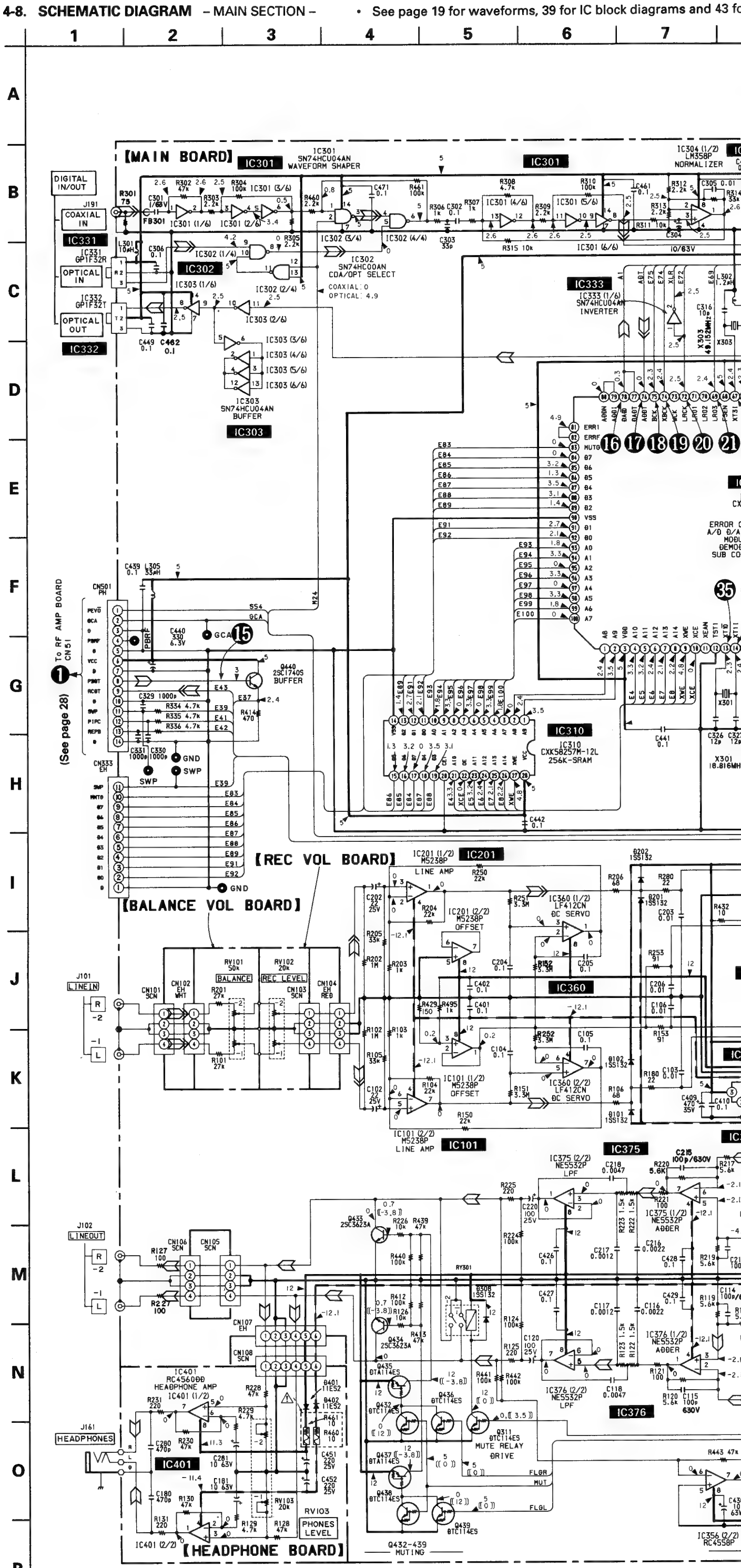
No.	Location
63	C – 7
74	B – 5
75	F – 6
76	F – 7
01	F – 2
31	H – 7
32	I – 7
01	B – 6
02	B – 6
03	A – 6
04	B – 8
01	B – 12
02	I – 9
1	H – 6
2	I – 5
3	I – 5
8	F – 10
9	F – 10
0	F – 10
1	F – 10
3	I – 6
4	I – 6
5	I – 6
6	J – 11
7	J – 10
8	I – 11
9	I – 11
0	I – 11
1	J – 11
2	I – 7
3	F – 11
2	H – 6
3	G – 5
4	G – 6
5	H – 6
6	H – 5
7	H – 5
8	H – 6
9	H – 5
0	E – 11
9	C – 12
1	B – 7
2	B – 7
3	C – 6

on the component side.
r side.

ables seeing.

• See page 15 for circuit boards location and 22 for semiconductor lead layouts.





Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- ⏦: Fuse resistor

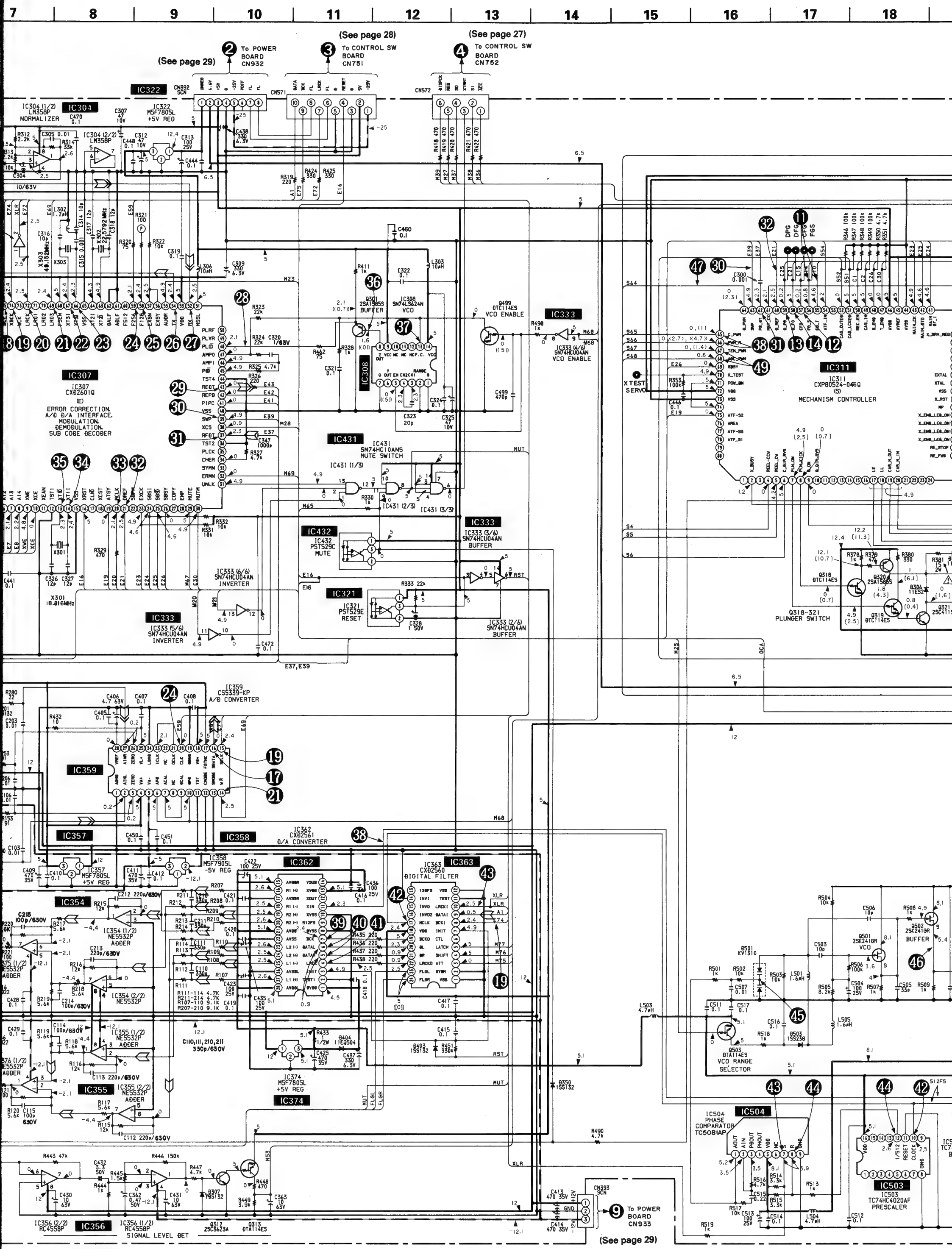
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

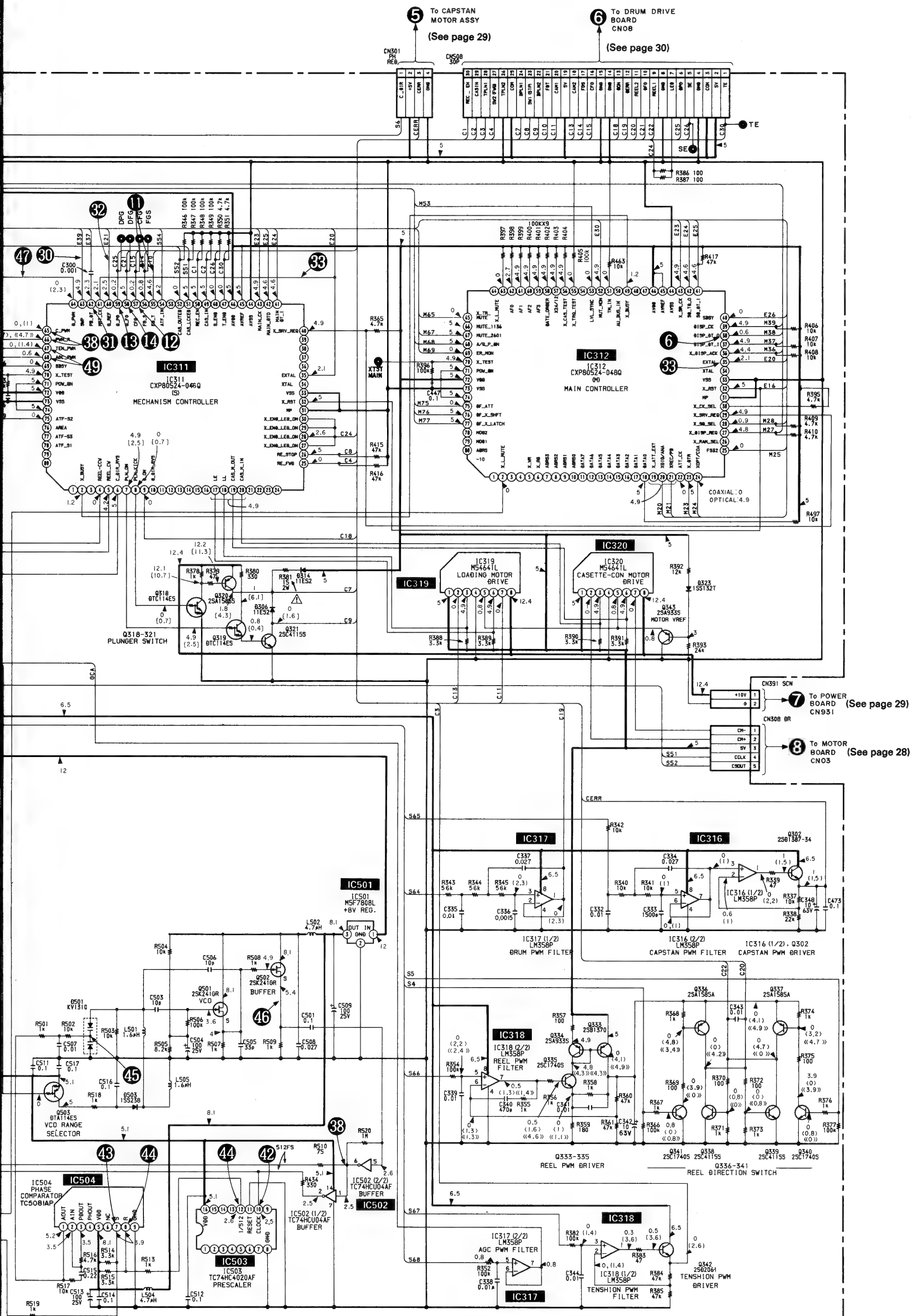
- ▬▬: B+ Line.
- ▪▪▪▪: B− Line.
- Voltage are dc with respect to ground under no-signal (STOP) conditions.

no mark : Stop
( ) : PLAY
(( )) : REC
< > : FF
<< >> : REW
[ ] : MOMENTARILY WHEN ▶▶, ◀◀ and ▶ BUTTON IS PRESSED.
[[ ]] : MUTING

- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path
  ⏩ : PB
  ⏩⏩ : REC

rams and 43 for pin functions.

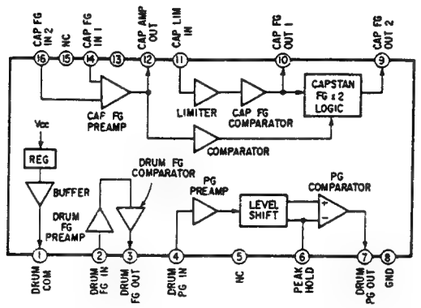



5 To CAPSTAN MOTOR ASSY
(See page 29)
6 To DRUM DRIVE BOARD CN08
(See page 30)
CN301 PH REB
CN508 30P
TE
SE
R386 100
R387 100
IC311
IC311 CXP80524-046Q (S)
MECHANISM CONTROLLER
IC312
IC312 CXP80524-048Q (M)
MAIN CONTROLLER
XTSI MAIN
IC319
IC319 M54641L LOADING MOTOR DRIVE
IC320
IC320 M54641L CASETTE-CON MOTOR DRIVE
Q318-321 PLUNGER SWITCH
Q333-335 REEL PWM DRIVER
Q336-341 REEL DIRECTION SWITCH
CN391 SCN
7 To POWER BOARD CN931 (See page 29)
CN308 BR
8 To MOTOR BOARD CN03 (See page 28)
IC501 M5F7808L +8V REG.
IC502 (2/2) TC74HCU04AF BUFFER
IC502 (1/2) TC74HCU04AF BUFFER
IC503 TC74HC4020AF PRESCALER
IC504 PHASE COMPARATOR TC5081AP
IC317 (1/2) LM358P DRUM PWM FILTER
IC317 (2/2) LM358P AGC PWM FILTER
IC316 (2/2) LM358P CAPSTAN PWM FILTER
IC316 (1/2), Q302 CAPSTAN PWM DRIVER
IC318 (2/2) LM358P REEL PWM FILTER
IC318 (1/2) LM358P TENSHION PWM FILTER
Q342 2SD2061 TENSHION PWM DRIVER
COAXIAL:0
OPTICAL:4.9

4-9. IC BLOCK DIAGRAMS

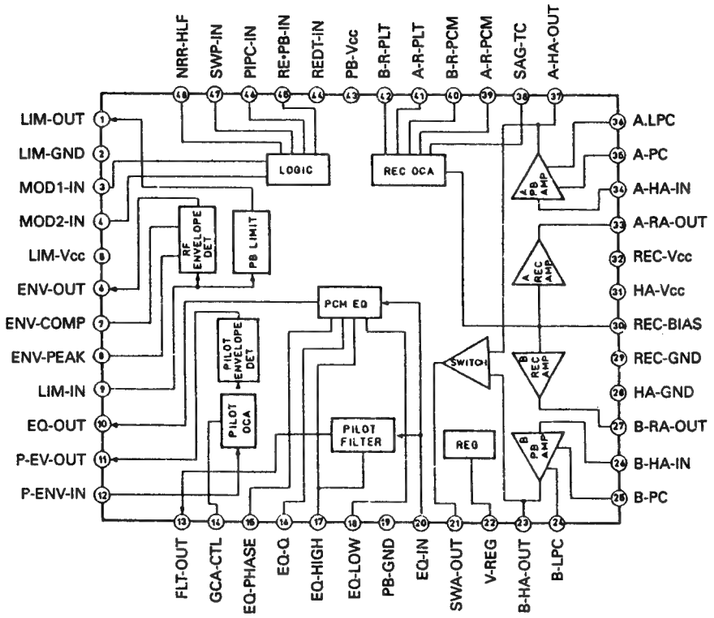
- **DRUM DRIVE BOARD**

IC01 CX20115A



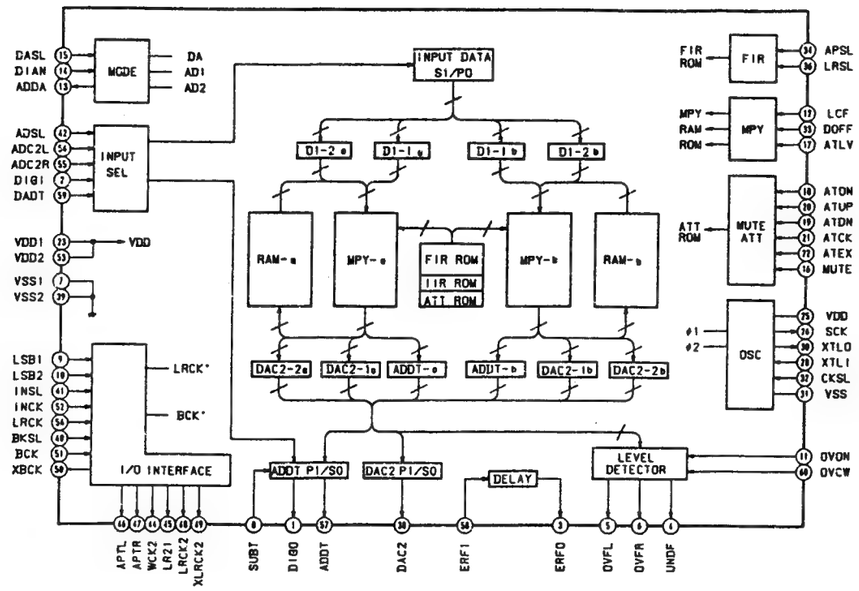
- **RF AMP BOARD**

IC1 CXA1364R

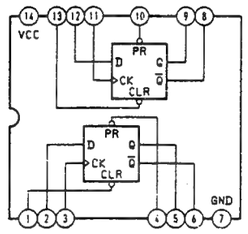


- **MAIN BOARD**

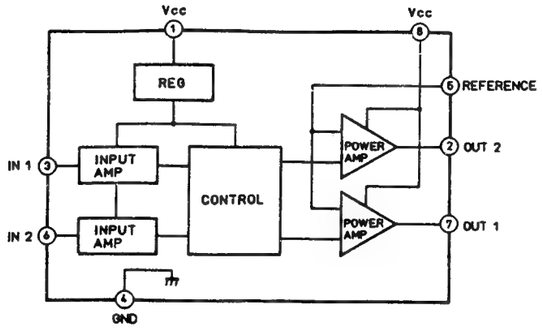
IC306 CXD1136Q



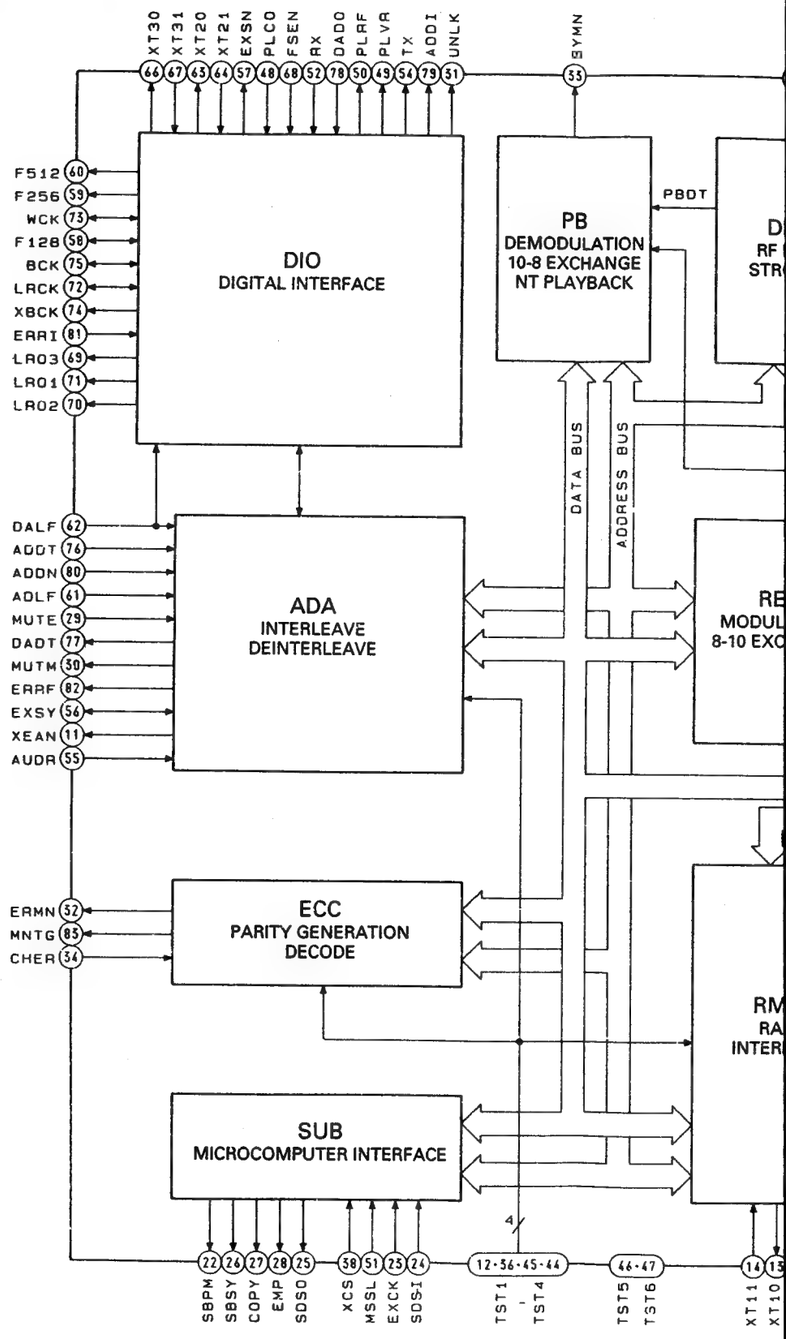
IC308 SN74LS624N

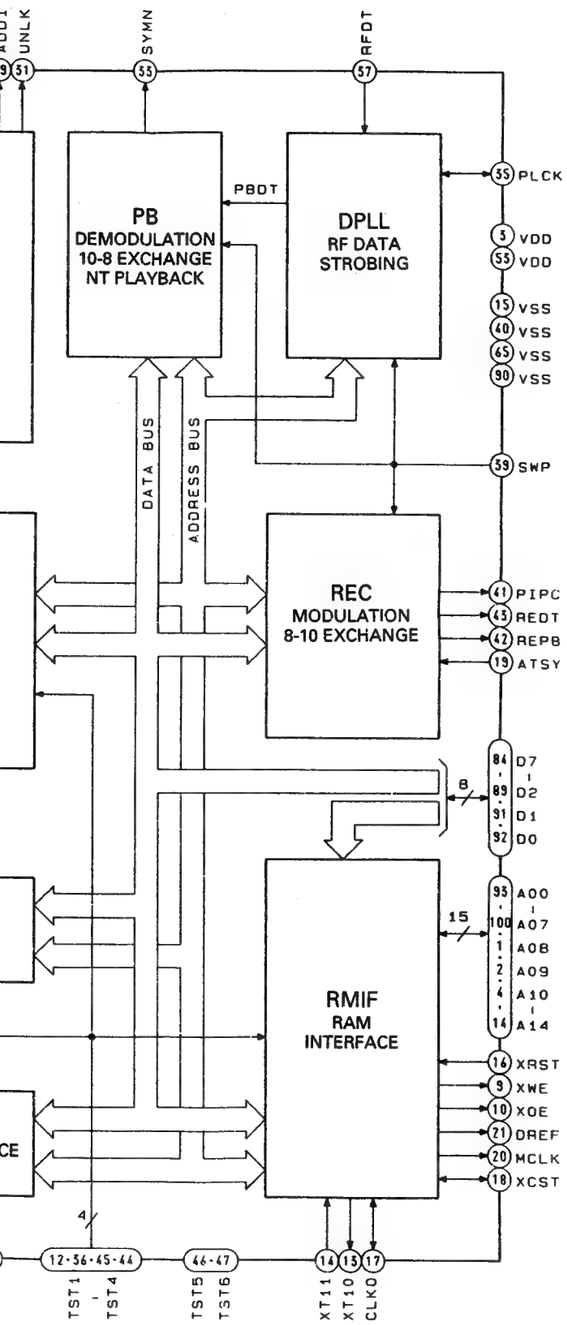


IC319,320 M54641L

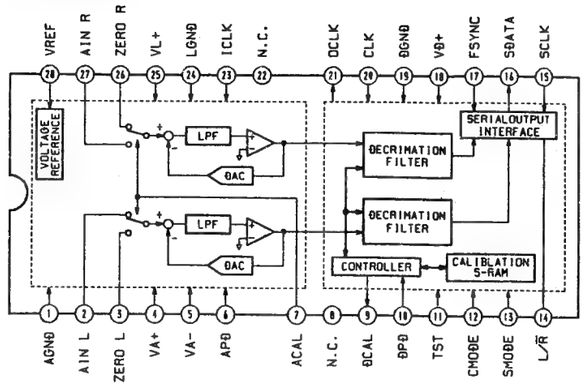


IC307 CXD2601AQ

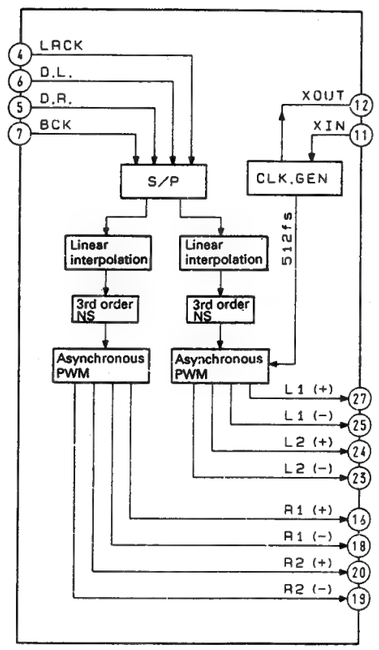




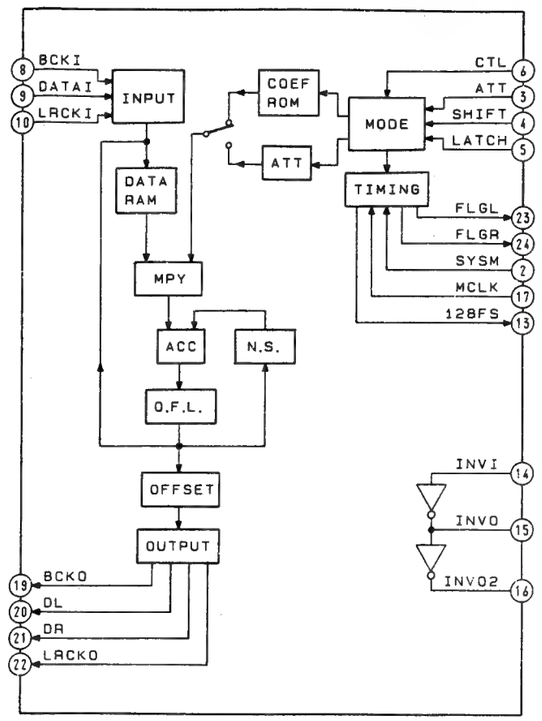
IC359 AK5339



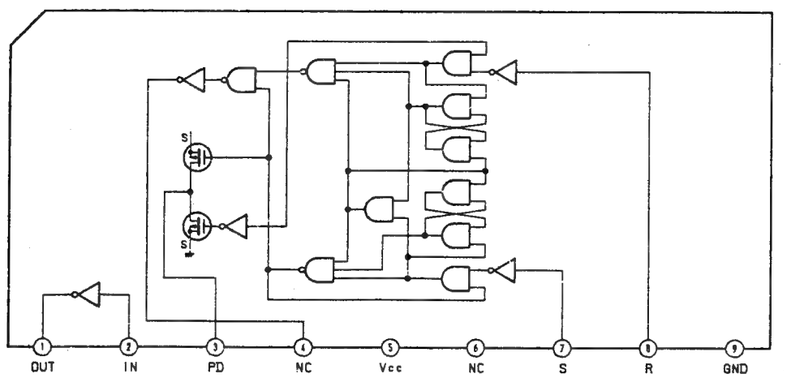
IC362 CXD2561M



IC363 CXD2560M



IC504 TC5081AP



4-10. PIN FUNCTIONS

IC307 DAT Signal Processor (CXD2601AQ)

This processor is an LSI to process recording and playback signals of the R-DAT system, in a single chip and provided with digital PLL, modem, error correction circuit, digital I/O, RAM control circuit, etc.

Pin No.	Pin Name	I/O	Description
1, 2	A08, A09	I/O	RAM address A08, A09
3	VDD	—	5 V
4-6	A10-A12	I/O	RAM address A10-A12
7, 8	A13, A14	O	RAM address A13, A14
9	XWE	O	RAM write enable signal
10	XOE	O	RAM output enable signal
11	XEAN	O	External addressing bus interrupt enable signal (Not in use)
12	TST1	I	Test pin (normally "L")
13	XT1O	O	18.816 MHz crystal oscillator output
14	XT1I	I	18.816 MHz crystal oscillator input
15	VSS	—	GND
16	XRST	I	Reset pin (normally"H")
17	CLKO	I/O	18.816 MHz clock output (Not in use)
18	XCST	I/O	SYEK (internal system clock) generation CLKO division timing signal (Not in use)
19	ATSY	I	ATF sync signal input
20	MCLK	O	9.408 MHz clock output
21	DREF	O	Drum servo reference signal
22	SBPM	O	Discrimination signal determining whether the subcode I/O clock (EXCK) is accepted ("L": accept, "H": ignore) (Not in use)
23	EXCK	I	Subcode I/O data transfer clock (DUTY50)
24	SDSI	I	Subcode serial data input
25	SDSO	O	Subcode serial data output
26	SBSY	O	Subcode I/O sync signal
27	COPY	O	Copy data output (Not in use)
28	EMP	O	Emphasis data output (Not in use)
29	MUTE	I	Mute pin
30	MUTM	O	Mute discrimination signal ("H": muted)
31	UNLK	O	RX PLL lock discrimination signal ("H": locked)
32	ERMN	O	Detects presence or absence of RF ("H": RF present, "L" during REC)
33	SYMN	O	C1 check result for RF ("H": OK) (Not in use)
34	CHER	I	Signal for discriminating whether C2 is 1 or 2 times (C2 → C1 → C2 or C1 → C2) ("H": 1 time, "L": 2 times) (Not in use)
35	PLCK	I/O	RF PLL clock output (Not in use)
36	TST2	I	Test pin (normally "L")
37	RFDT	I	RF signal input
38	XCS	I	Subcode I/O chip select ("L": select)
39	SWP	I	RF switching pulse ("L": A-CH, "H": B-CH)
40	VSS	—	GND
41	PIPC	O	REC data PILOT/PCM discrimination signal ("H": PILOT, during playback: always "L")
42	REPB	O	Record/playback switching signal ("H": record)
43	REDT	O	Recording signal output, fixed "L" during playback
44	TST4	I	Test pin (normally "L")
45	PDO	O	RX APLL PD output (comparator output)
46	AMPI	I	RX APLL oscillator cell amp input
47	AMPO	O	RX APLL oscillator cell amp inverted output
48	PLCO	I	RX APLL external VCO clock input

Pin No.	Pin Name	I/O	Description
49	PLVR	O	RX APLL comparison signal when external comparator is active (Vin) Not in use
50	PLVF	O	RX APLL comparison signal when external comparator is active (Rin) Not in use
51	MSSL	I	Master/slave setting ("H": master (fixed with the equipment), "L": slave)
52	RX	I	Digital input
53	VDD	—	5 V
54	TX	O	Digital output
55	AUDR	I	Audio mode/data recorder mode setting ("H": audio mode, "L": data recorder mode)
56	EXSY	I/O	Complete copy sync signal (25/3 - 100/3 Hz)
57	EXSN	I/O	Complete copy sync signal (25/3 - 100/3 Hz)
58	F128	I/O	128fsCK (normal)/256fsCK (×2) (DUTY50)
59	F256	O	256fsCK (normal)/512fsCK (×2) (DUTY50)
60	F512	O	512fsCK (normal)/512fsCK (×2) (DUTY50)
61	ADLF	I	Signal for discriminating whether ADDT serial data is MSB first or LSB first ("H": LSB first)
62	DALF	I	Signal for discriminating whether DADT serial data is MSB first or LSB first ("H": LSB first)
63	XT20	O	22.5792 MHz crystal oscillator output
64	XT21	I	22.5792 MHz crystal oscillator input
65	VSS	—	GND
66	XT30	O	49.152 MHz crystal oscillator output (24.576 MHz in B mode)
67	XT31	I	49.152 MHz crystal oscillator input (24.576 MHz in B mode)
68	FSEN	I	F128, BCK, LRCK input/output switch ("H": output)
69	LR03	O	LR02 inversion
70	LR02	O	LRCK 16BCK delay signal
71	LR01	O	LRCK 15BCK delay signal
72	LRCK	I/O	fs (normal)/2fs (×2) ("L": L-CH, "H": R-CH)
73	WCK	I/O	2fs (normal)/4fs (×2) (input mode only for testing)
74	XBCK	O	BCK inversion
75	BCK	I/O	64fs (normal)/128fs (×2)
76	ADDT	I	Serial AD data (complement of 2)
77	DADT	O	Serial DA data (complement of 2)
78	DADO	I	Digital output (DA) data input (normally connected to DADT)
79	ADDI	O	Digital input (AD) data output (normally connected to ADDN)
80	ADDN	I	Digital input (DA) data input
81	ERRI	I	Digital output V-FLAG data input (normally connected to ERRF)
82	ERRF	O	Signal output for discriminating whether or not DADT has interpolated data ("H": interpolated data)
83	MUTG	O	Error correction status monitor trigger
84-89	D7-D2	I/O	RAM data bus D7-D2
90	VSS	—	GND
91, 92	D1, D0	I/O	RAM data bus D1, D0
93-100	A00-A07	I/O	RAM address A00-A07

IC311 Mechanism/Servo Micon (CXP80524-046Q)

The mechanical deck servo systems are controlled by the captioned micon according to instructions from the main micon (IC312).

Pin No.	Pin Name	I/O	Connected to	Description
1		O		Not in use
2	$\overline{\text{BUSY}}$	O	Main Micon	Busy (Active "L") to the Main Micon
3		O		Not in use
4	REEL_CCW	O	Mechanism	Reel motor CCW ("L": RVS direction) } *1
5	REEL_CW	O	Mechanism	Reel motor CW ("H": FWD direction) } *1
6	C_DIR_RVS	O	Mechanism	Capstan Direction ("L": FWD, "H": RVS)
7	PLN_ON	O	Mechanism	Plunger On
8	PLN_KICK	O	Mechanism	Plunger Kick
9	D_ON	O	Mechanism	Drum On ("H": The drum is revolving)
10	D_DIR_RVS	O	Mechanism	Not in use
11-16		O		Not in use
17	LE	O	Mechanism	Loading Motor Eject } *2
18	LL	O	Mechanism	Loading Motor Load } *2
19	CAS_M_OUT	O	Mechanism	Cassette control motor Out } *3
20	CAS_M_IN	O	Mechanism	Cassette control motor In } *3
21-24		—		Not in use
25	RE_FWD	I	Mechanism	Encoder SW2 } *4
26	RE_STOP	I	Mechanism	Encoder SW1 } *4
27-30	$\overline{\text{END\_LED\_ON}}$	O	Mechanism	End sensor ON Illuminated upon "L" (rectangular wave of about 1kHz). It is not output unless a cassette is mounted ("H").
31	$\overline{\text{MP}}$	I		Microprocessor mode selected (the equipment is fixed at "L").
32	$\overline{\text{RST}}$	I		System Reset (low active)
33	Vss	—		Power terminal (GND)
34	XTAL	O		System Clock Output (Not in use)
35	EXTAL	I	CXD2601AQ	System Clock Input (9.408 MHz)
36-39		—		Not in use
40	X_SRV_REQ	I	Main Micon	Request for communication from the Main Micon
41	MAIN_DT_I	I	Main Micon	Serial Input from the Main Micon
42	MAIN_DT_O	O	Main Micon	Serial Output to the Main Micon
43	MAIN_CK	I	Main Micon	Serial Clock with the Main Micon
44	AVss	—		GND for A/D
45	AVref	—		Reference Voltage for A/D (+5 V)
46	AVdd	—		Power Supply for A/D (+5 V)
47	T_END	I	Mechanism	Take-up side end sensor input (analog) } Magnetic matter: 0V,
48	S_END	I	Mechanism	Supply side end sensor input (analog) } Leader tape: AC (*5)
49	CAS_IN	I	Mechanism	Cassette-in switch (S01). "H": Cassette is mounted.
50	REC_EN	I	Mechanism	Rec-enable switch (S01). "H": REC enabled.
51	CAS_LCKed	I	Mechanism	Casecon locked Upon completion of loading: "H"
52	CAS_OUTed	I	Mechanism	Casecon outed Upon completion of loading OUT: "H"
53		I		Not in use
54	ATF_IN	I	RF Amp	ATF PILOT input
55	FG_T	I	Mechanism	Reel FG (T Side) } 6/24Hz (Small reel diameter) -
56	FG_S	I	Mechanism	Reel FG (S Side) } 15/24Hz (Large reel diameter) (In SP FWD)
57	C_FG	I	Mechanism	Capstan FG SP: 674 Hz, LP: 337 Hz
58	D_FG	I	Mechanism	Drum FG 400 Hz: LP REC, 800 Hz: Other modes
59	D_PG	I	Mechanism	Drum PG } Other than LP REC: 800/24Hz
60	D_REF	I	CXD2601AQ	Drum Reference } In LP REC: 400/24Hz

Pin No.	Pin Name	I/O	Connected to	Description
61	MST_CK	I	CXD2601AQ	Master clock (9.408MHz)
62	PB_DT	I	RF Amp	PB Data input to create ATF Sync
63	SWP	O	CXD2601AQ	Switching Pulse "L": Ach, "H": Bch
64	D_PWM	O	Mechanism	PWM Out for Drum
65	C_PWM	O	Mechanism	PWM Out for Capstan
66	PWM_R	O	Mechanism	PWM Out for Reel
67	TEN_PWM	O	Mechanism	PWM Out for Tension Regulator Plunger
68	AGC_PWM	O	RF Amp	PWM Out for AGC
69	$\overline{SBSY}$	I	CXD2601AQ	↓ of subsync is detected (XINT2).
70	$\overline{TEST}$	I	Pull-up	Test Mode (active "L")
71	POW_DN	I		Not in use
72	Vdd	—		Power terminal (+5 V)
73	Vss	—		Power terminal (GND)
74		—		Not in use
75	ATF_S2	O	CXD2601AQ	ATF Sampling Pulse
76-80		—		Not in use

* 1 Reel motor control

	CCW (counterclockwise)	CW (clockwise)
STOP (only in POWER ON)	L	L
FWD	L	H
RVS	H	L
Prohibit	H	H

*2 Loading motor control

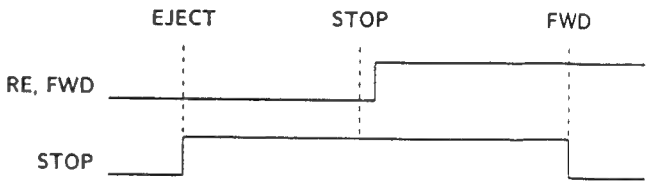
	LE	LL
—	L	L
LOAD	L	H
EJECT	H	L
Brake	H	H

*3 Casecon motor control

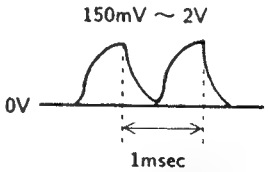
	OUT	IN
—	L	L
IN	L	H
OUT	H	L
Brake	H	H

*4 Encoder

RF-FWD	RE_STOP	Position
L	L	EJECT
L	H	STOP UNLD-STOP
H	L	FWD
H	H	STOP-FWD



*5 End sensor



With leader tape

IC312 Main Micon (CXP80524-048Q)

This Micon generally controls the operation of the equipment while exchanging data with the display micon (IC701) and mechanism/servo micon (IC311) in serial communications, including the DAT signal processor (IC307), digital filter (IC363) and other IC.

Pin No.	Pin Name	I/O	Connected to	Description
1		O		Not in use
2	L_MUTE	O	Line Out	Line Mute (Active "L")
3		O		Not in use
4		O		Not in use
5	WRT	O	Clock IC	Write request (Active "L")
6	RD	O	Clock IC	Read request (Active "L")
7-10	ADRS_3-0	O	Clock IC	Address 3-0 (Address BUS)
11-14	DATA_7-4	I/O		DATA 7-4 (DATA BUS). Not in use with the equipment
15-18	DATA_3-0	I/O	Clock IC	DATA 3-0 (DATA BUS)
19	ATT_EXT	O	CXD1136Q	Fade attenuator ck externally selected (Active "L")
20	DIG/ANA	O	CXD1136Q	Fade In/Out switching for DIG ("L")/ANA ("H")
21	REC/PB	O	CXD1136Q	Fade In/Out REC switching for ("L")/PB ("H")
22	ATT_CK	O	CXD1136Q	Clock for fade In/Out
23	DTR	O	CXD2601AQ	Audio use ("H")/Data Recorder use ("L). Becomes "L" in after-recording and searching.
24	OPT/COA	O	Digital I/O	Switching for Optical ("L")/Coaxial ("H")
25	FS32	O	1Bit DAC	"H" upon Fs = 32kHz. "L" for others.
26	RAM_SEL	O		Not in use
27	DISP_REQ	O	Display Micon	Request for communication with the Display Micon ("L" Active)
28	SD_SEL	O	CXD2601AQ	Request for communication with CXD2601 ("L" Active)
29	SRV_REQ	O	Mechanism Micon	Request for communication with the Mechanism Micon ("L" Active)
30	CLOCK_SEL	O	Clock IC	Clock IC chip selected
31	MP	I		Microprocessor mode selected (fixed at "L" with the equipment)
32	RST	I		System Reset ("L" Active)
33	Vss	—		Power terminal (GND)
34	XTAL	O		System Clock Output (Not in use)
35	EXTAL	I	CXD2601AQ	System Clock Input (9.048 MHz)
36	DISP_ACK	I	Display Micon	ACKnowledge (Active "L")
37	DISP_DT_I	I	Display Micon	Serial Input
38	DISP_DT_O	O	Display Micon	Serial Output
39	DISP_CK	I	Display Micon	Serial clock
40	SBSY	I	CXD2601AQ	Subcode sync
41	SR_DT_IN	I	CXD2601AQ & Mechanism Micon	Serial Data In
42	SR_DT_OUT	O		Serial Data Out
43	SR_CK	I/O		Serial clock (In/Out) to Sub Code Interface
44	AVss	—		GND for A/D
45	AVref	—		Reference Voltage for A/D (+5 V)
46	AVdd	—		Power Supply for A/D (+5 V)
47		I		Not in use
48		I		Not in use
49	BUSY	I	Mechanism Micon	Mechanism servo micon Busy (Active "L")
50	AU_BUS_IN	I	Audio Bus	Not in use

Pin No.	Pin Name	I/O	Connected to	Description
51	TM_IN	I	Clock IC	TM_OUT for clock IC
52	MUT_MON	I	CXD2601AQ	Mute monitor (Active "H")
53	LVL_SYNC	I	Audio Block	Start ID is written by entering Level Sync Input audio.
54		I		Not in use
55	$\overline{\text{TRQ\_TEST}}$	I	Pull-up	Not in use
56	$\overline{\text{NO\_CAS\_TEST}}$	I	Pull-up	Not in use
57	TIME_$\overline{24}$/12	I	Pull-up	Time indication "H": 12 hours (AM, PM) "L": 24 hours display
58	DATE_ORDER	I	Pull-up	Order of DATA display "H": Year, month and day "L": Month, day and year
59-62	AF_3-0	I	Pull-up	Not in use
63		O	Pull-up	Not in use
64	$\overline{\text{L\_MUTE}}$	O		Line Mute (Active "L"). Not in use with the equipment (Not in use)
65	$\overline{\text{TR\_MUTE}}$	O	Line Out	Transistor Mute (Active "L")
66	MUTE_1136	O		Not in use
67	MUTE_2601	O	CXD2601AQ	Mute for CXD2601 (Active "H")
68	A_D_PWR_DWN	O	CS5339	A/D Converter Power Down Mode (Active "H"). The AD converter is turned OFF upon digital input/output.
69	ER_MON	I	CXD2601AQ	Error Monitor (Data Valid)
70	$\overline{\text{TEST}}$	I	Pull-up	Test Mode (Active "L")
71	POW_DN	I	+5 V	Not in use
72	Vdd	—		Power terminal (+5V)
73	Vss	—		Power terminal (GND)
74		—		Not in use
75	D_F_ATT	O	CXD2560M	Communication line (Serial Data) with Digital Filter
76	D_F_$\overline{\text{SHIFT}}$	O	CXD2560M	Communication line with Digital Filter (Shift Clock; shifted by ↓ and taken in by ↑)
77	D_F_$\overline{\text{LATCH}}$	O	CXD2560M	Communication line (Latch Pulse) with Digital Filter
78, 79	MODE2, 1	O		Mode Control of the RF amplifier (Not in use)
80		O		Not in use

IC362 Pulse D/A Converter (CXD2561M-1)

The Converter is a small, high-performance 1 bit pulse D/A converter that provides 4 asymmetrical PWM wave outputs in each ch of L/R.

Pin No.	Pin Name	I/O	Description
1	DVDD	—	Digital power supply
2	TEST	I	Test terminal. Normally fixed at "L."
3	INIT	I	Again synchronized at the buildup edge of the signal.
4	LRCKI	I	LRCK input
5	DRI	I	Rch data input
6	DLI	I	Lch data input
7	BCKI	I	BCK input
8	DVss	—	Digital GND
9	512Fs	O	512Fs output
10	XVss	—	Clock GND
11	XIN	I	X'tal oscillator input terminal (512Fs)
12	XOUT	O	X'tal oscillator output terminal
13	XVDD	—	Clock power supply
14	VSUB	—	Substrate. Connected to GND.
15	AVDDR	—	Analog power supply
16	R1 (+)	O	Rch PLM output 1 (normal phase)
17	AVssR	—	Analog GND
18	R1 (–)	O	Rch PLM output 1 (reverse phase)
19	R2 (+)	O	Rch PLM output 2 (normal phase)
20	R2 (–)	O	Rch PLM output 2 (reverse phase)
21	AVDD	—	Analog power supply
22	AVss	—	Analog GND
23	L2 (–)	O	Lch PLM output 2 (reverse phase)
24	L2 (+)	O	Lch PLM output 2 (normal phase)
25	L1 (–)	O	Lch PLM output 1 (reverse phase)
26	AVssL	—	Analog GND
27	L1 (+)	O	Lch PLM output 1 (normal phase)
28	AVDDL	—	Analog power supply

IC363 Digital Filter (CXD2560M)

The Filter is a digital audio 8x oversampling digital filter with builtin L/R 2ch filter, noise shaping attenuator, soft muting deemphasis, etc.

Pin No.	Pin Name	I/O	Description
1	Vss	—	Power terminal (GND)
2	SYSM	I	System mute input. Effective upon "H"
3	ATT	I	ATT data input in CTL "L." EMP input upon CTL "H."
4	SHIFT	I	Shift clock input upon CTL "L." FS32 input upon CTL "H."
5	LATCH	I	Latch clock input upon CTL "L." FS48 input upon CTL "H."
6	CTL	I	Pull-down in the IC. Direct input mode upon "H." Serial transfer mode upon "L."
7	INIT	I	Synchronized again at the buildup edge of the signal.
8	BCKI	I	BCK input
9	DATAI	I	Data input
10	LRCKI	I	LRCK input
11	TEST	I	Test terminal. Fixed at "L" during normal use.
12	Vss	—	Power terminal (GND)
13	128Fs	O	128Fs clock output
14	INVI	I	Inverter input
15	INVO	O	Inverter output
16	INVO2	O	Inverter output
17	MCLK	I	Master clock input (f=51 2Fs)
18	VDD	—	Power terminal (+5 V)
19	BCKO	O	BCK output
20	DL	O	Lch data output
21	DR	O	Rch data output
22	LRCKO	O	LRCK output
23	FLGL	O	Lch ø mute flag output
24	FLGR	O	Rch ø mute flag output

IC701 Display Micon (CXP5058H-657Q)

The Micon controls key input, FL tube display, remote control signal input, level meter (IC702) and EEP-ROM (IC703) according to instructions from the Main Micon (IC312).

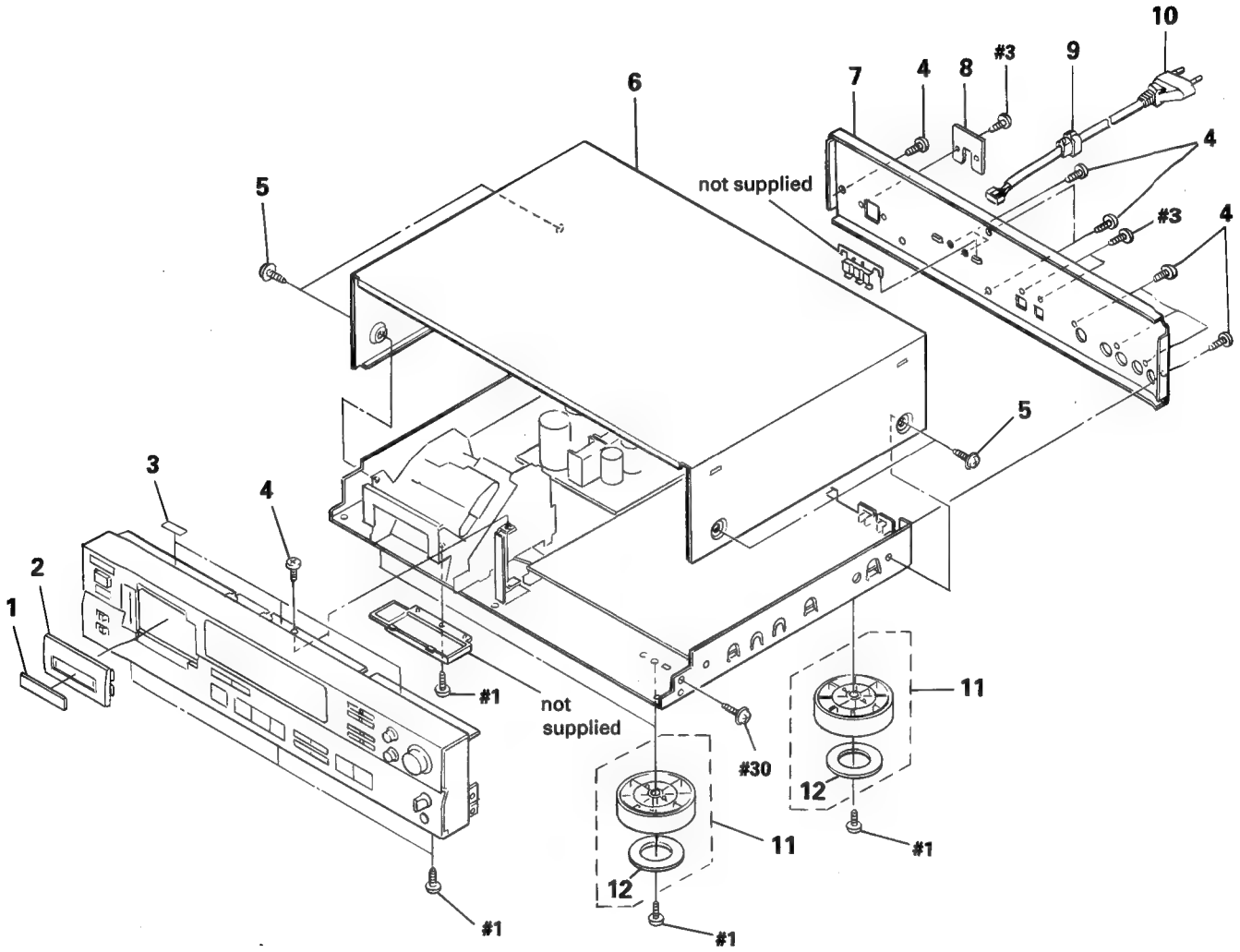
Pin No.	Pin Name	I/O	Connected to	Description
1-18	e_-v_SEG	O	FL tube FL701	FL Segment 'e'-'v'
19-28	10_-1_G	O	FL tube FL701	FL Grid #10-#1
29	$\overline{\text{DSP\_REQ}}$	I	MAIN Micon	Communication request ("L" Active)
30	XTAL	—	Ceramic oscillator	
31	EXTAL	I	Ceramic oscillator	4.19MHz ceramic oscillator
32	$\overline{\text{RST}}$	I		System Reset ("L" active)
33	NC	—		Not in use
34	Vdd	I		Power terminal (+5 V)
35-42	AD_0-7	I	Panel switch	Key input A/D converter input #0 - #7
43	NC	—		Not in use
44	DISP_CK	O	MAIN Micon	Shift clock
45	SO	O	MAIN Micon	Serial data OUT
46	SI	I	MAIN Micon	Serial data IN
47	$\overline{\text{DSP\_ACK}}$	O	MAIN Micon	Acknowledge (Active"L")
48	REC_MODE	I	S703	REC MODE "H": Standard, "L": Long
49	$\overline{\text{TEST}}$	I	Pull-down	Test mode (Active "L")
50	$\overline{\text{CLOCK\_SET}}$	I		Not in use
51-54	LVL_DT_0-3	I/O	Level Meter IC	Level Meter Data 0-3
55, 56	LVL_ADRS_0, 1	O	Level Meter IC	Level Meter Data 0, 1
57	$\overline{\text{LVL\_RD}}$	O	Level Meter IC	Level Meter Read Mode (Active "L")
58	$\overline{\text{LVL\_WR}}$	O	Level Meter IC	Level Meter Write Mode (Active "L")
59	$\overline{\text{LVL\_SEL}}$	O	Level Meter IC	Level Meter IC Select (Active "L")
60	$\overline{\text{RM\_SEL}}$	O	Open	External remote controller selected (not in use)
61	PY2	I	Pull-up	Not in use
62	RMC	I	Open	Not in use
63	RMC_CAT	I	Pull-down	Remote control category "L": DAT1, "H": DAT2. Fixed at "L" with the equipment.
64	$\overline{\text{TR\_MUTE}}$	I	IC431	Level meter mute (Active "L")
65	$\overline{\text{BUSY}}$	I	EEPROM	BUSY signal (Active "L")
66	ROM_DT_IN	I	EEPROM	Data input
67	ROM_DT_OUT	O	EEPROM	Data output
68	$\overline{\text{SHIFT\_CK}}$	O	EEPROM	Shift clock
69	$\overline{\text{CE}}$	O	EEPROM	Chip enable
70	DTC/$\overline{\text{XPCM}}$	I	Pull-up	Equipment model discrimination input. Fixed at "H" with the equipment
71	Vss	I		Power terminal (GND)
72	TX	—	Open	Not in use
73	NC	—	Open	Not in use
74	TEX	—	+5 V	Not in use
75	Vref	I	+5 V	Analog board reference voltage
76	Vfdp	I	–25 V	FL display tube driving voltage
77-80	a_-d_SEG	O	FL tube	FL Segment 'a'-'d'

SECTION 5
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB,BALANCE(WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.
- G : Germany model

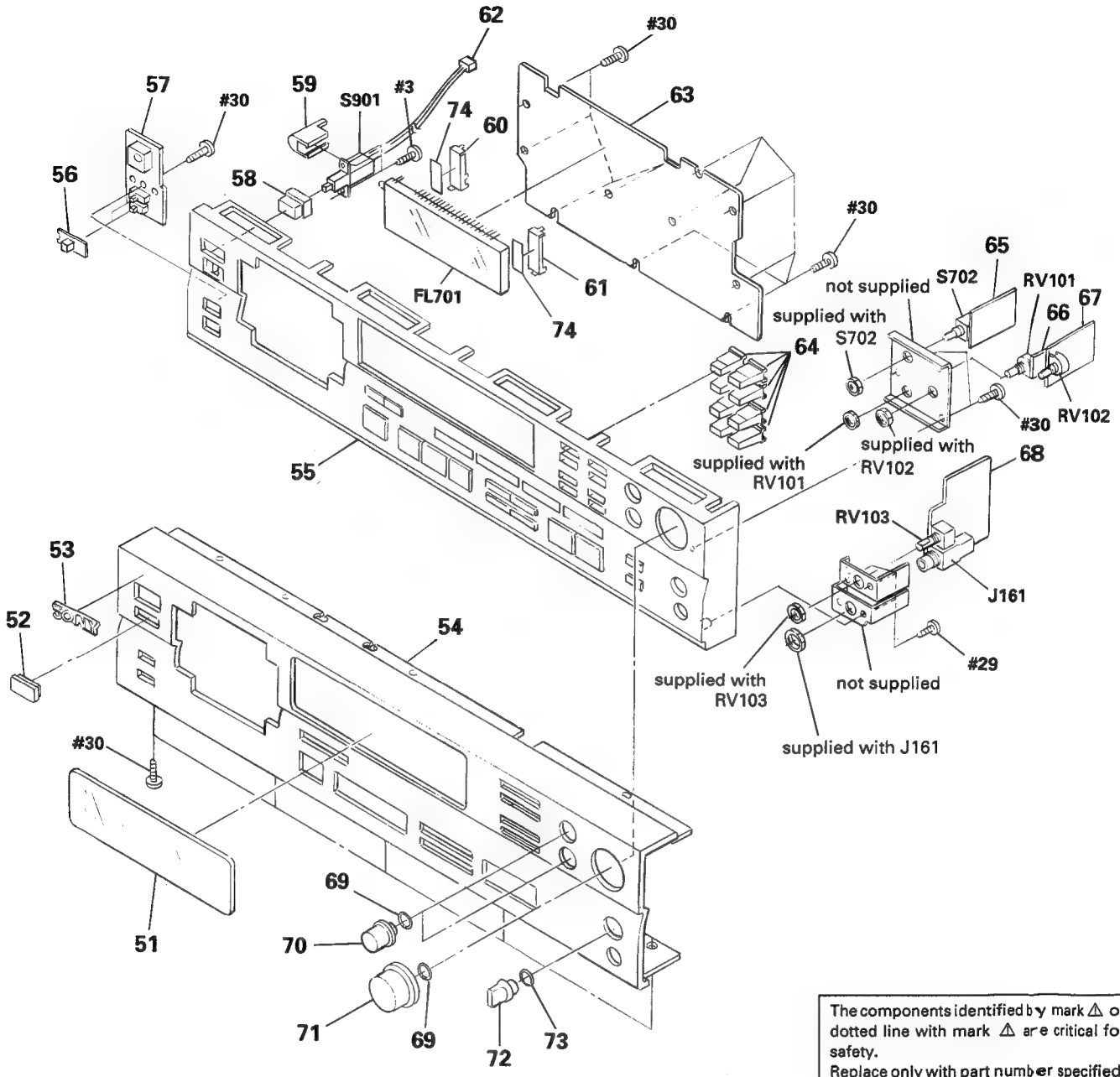
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remarks
1	3-374-275-01	WINDOW (670)	
2	3-374-279-01	HOLDER (670)	
3	3-831-441-XX	CUSHION, SPEAKER	
4	3-703-685-21	SCREW (+BV 3X8)	
5	3-363-099-01	SCREW (CASE +3X8 TP2)	
6	3-350-407-41	CASE	
7	* 3-368-712-81	PANEL, BACK	
8	* 4-923-873-01	BRACKET, CORD STOPPER	
9	* 3-703-244-00	BUSHING (2104), CORD	
10	⚠ 1-575-912-11	CORD, POWER	
11	X-3304-938-2	FOOT ASSY	
12	4-923-836-11	CUSHION	

5-2. FRONT PANEL SECTION

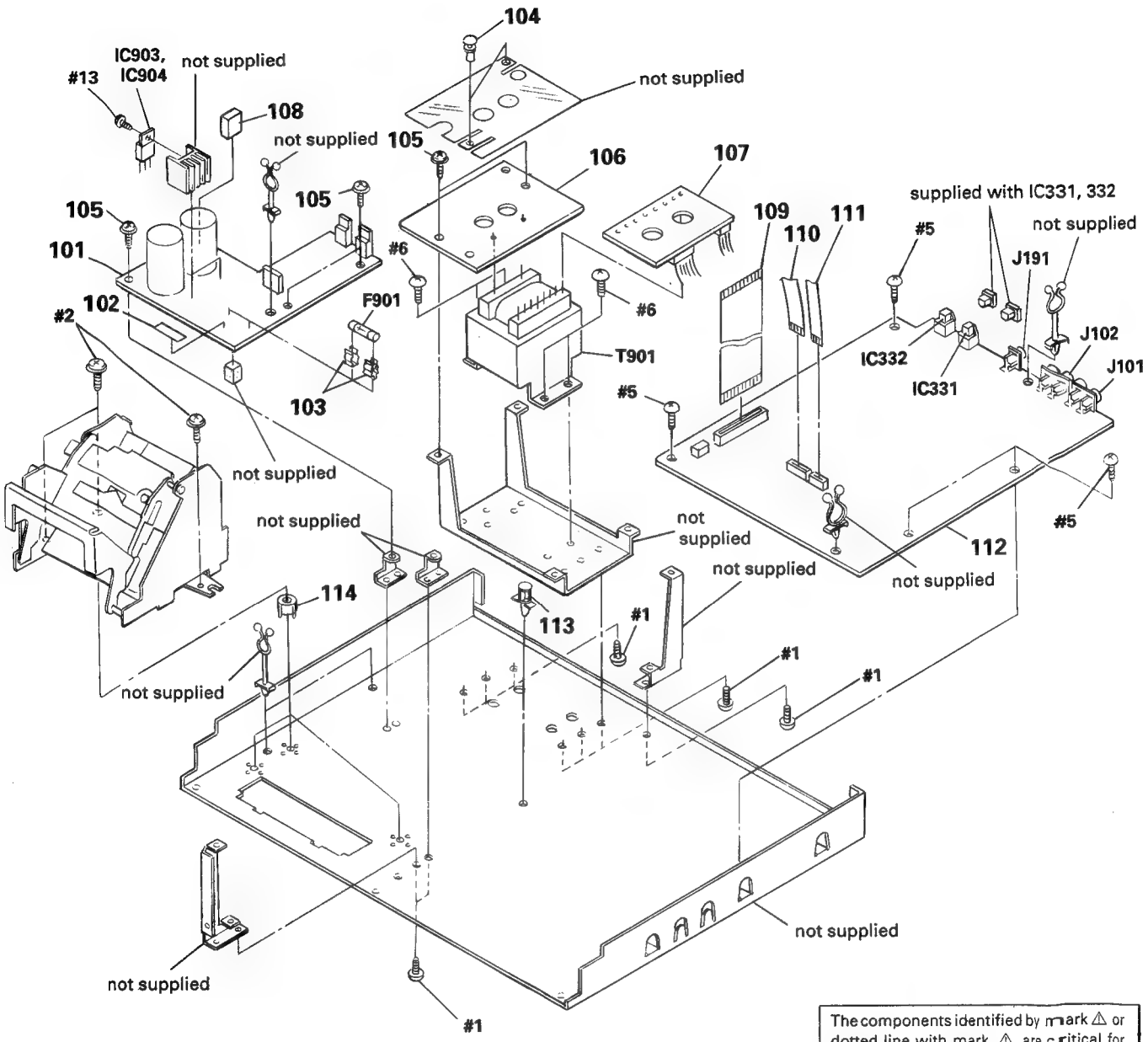


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.		Part No.	Description	Remarks
51		3-368-698-01	WINDOW (FL TUBE)	
52		3-364-919-11	FILTER	
53		4-908-848-01	EMBLEM, SONY	
54		3-374-281-01	PANEL (FRONT)	
55		X-3363-905-2	ESCUTCHEON (PANEL) ASSY	
56		4-931-421-11	KNOB (T & S)	
57	*	1-639-329-11	TIMER SW BOARD	
58		4-917-460-01	KNOB, POWER	
59		3-575-524-00	COVER, POWER SWITCH	
60	*	4-922-524-01	HOLDER (LEFT)	
61	*	4-922-523-01	HOLDER (RIGHT)	
62		1-590-321-71	LEAD (WITH CONNECTOR)	
63	*	A-2006-669-A	CONTROL SW BOARD, COMPLETE	

Ref. No.		Part No.	Description	Remarks
64		3-364-927-01	BUTTON (10 KEY)	
65	*	1-639-328-11	INPUT SW BOARD	
66	*	1-639-326-11	BALANCE VOL BOARD	
67	*	1-639-325-11	REC VOL BOARD	
68	*	1-639-327-11	HEADPHONE BOARD	
69		3-356-957-01	SPRING	
70		3-364-173-11	KNOB (BAL)	
71		3-368-707-01	KNOB (REC LEVEL)	
72		3-354-931-01	KNOB (DIA. 10)	
73		3-354-981-01	SPRING (SUS), RING	
74		9-911-839-XX	CUSHION	
FL701		1-519-672-11	INDICATOR TUBE, FLUORESCENT	
S901	⚠	1-554-920-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	

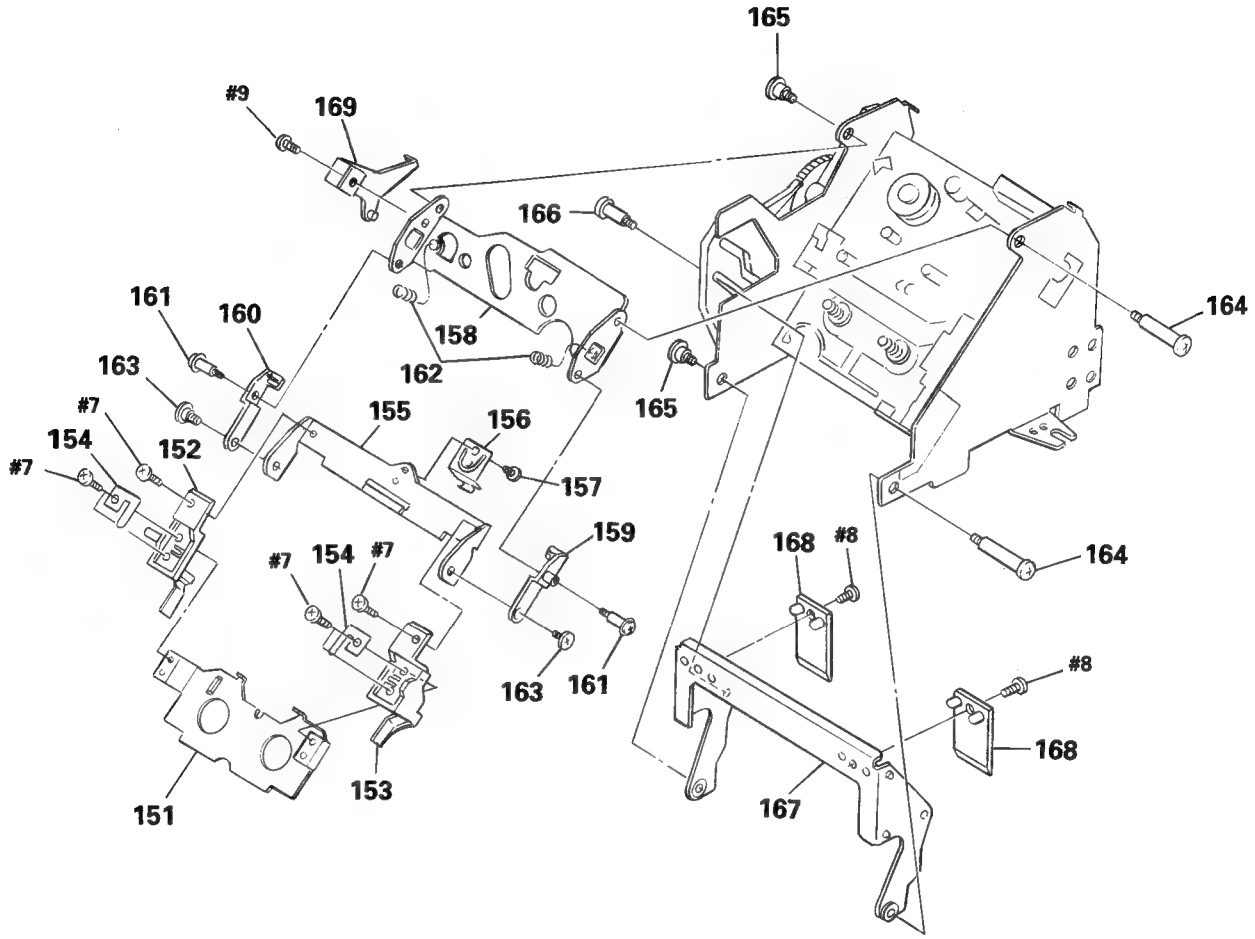
5-3. CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
101	* A-2006-670-A	POWER BOARD, COMPLETE	
102	3-701-947-15	LABEL (T2.5A), FUSE	
103 ⚠	1-533-213-31	HOLDER, FUSE	
104	4-812-134-00	RIVET NYLON, 3.5	
105	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
106	* 1-639-333-11	PRIMARY BOARD	
107	* 1-639-332-11	RELAY BOARD	
108	* 3-685-232-01	SPACER, VI	
109	1-590-915-11	WIRE, FLAT TYPE (30 CORE)	
110	1-590-916-11	WIRE, FLAT TYPE (10 CORE)	
111	1-590-914-11	WIRE, FLAT TYPE (6 CORE)	
112	* A-2006-671-A	MAIN BOARD, COMPLETE	
113	* 3-670-570-00	SPACER, SUPPORT	
114	3-368-709-01	HOLDER (MD)	
F901 ⚠	1-532-286-00	FUSE, TIME-LAG (T 2.5A)	
T901 ⚠	1-450-557-11	TRANSFORMER, POWER	

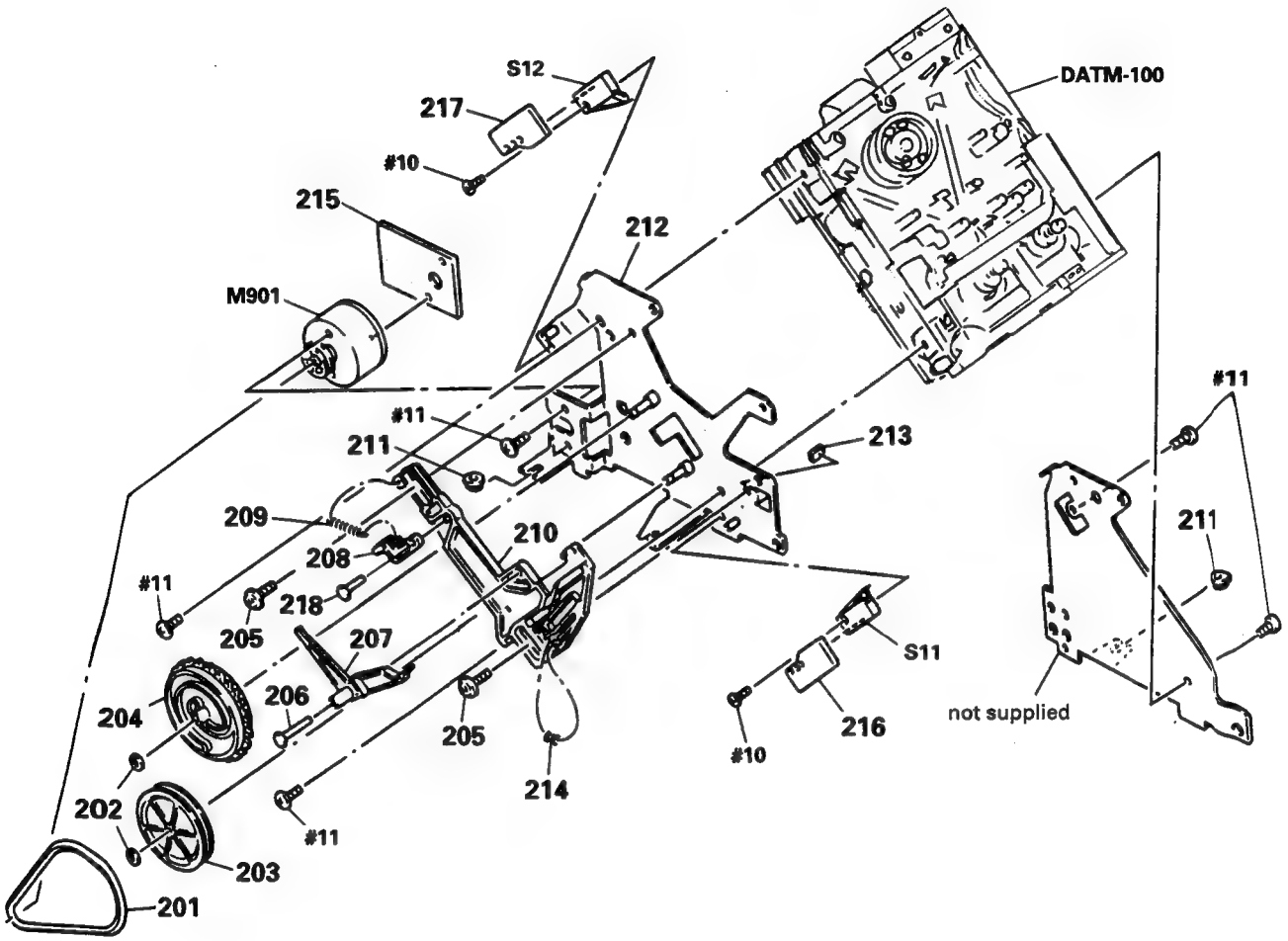
5-4. MECHANISM SECTION 1



Ref. No.		Part No.	Description	Remarks
151		4-931-476-01	HOLDER (LOWER)	
152		4-931-484-01	HOLDER (C-LEFT)	
153		4-931-486-01	HOLDER (C-RIGHT)	
154		3-366-308-01	SPRING (SIDE), PLATE	
155	*	4-931-485-01	HOLDER (C-INNER)	
156		4-931-461-01	SPRING (CENTER), LEAF	
157		3-352-517-01	SCREW (M2X2.5)	
158	*	3-369-235-01	PLATE, FULCRUM	
159		4-931-481-01	ARM (LIMITER L)	
160		4-931-473-01	ARM (LIMITER R)	

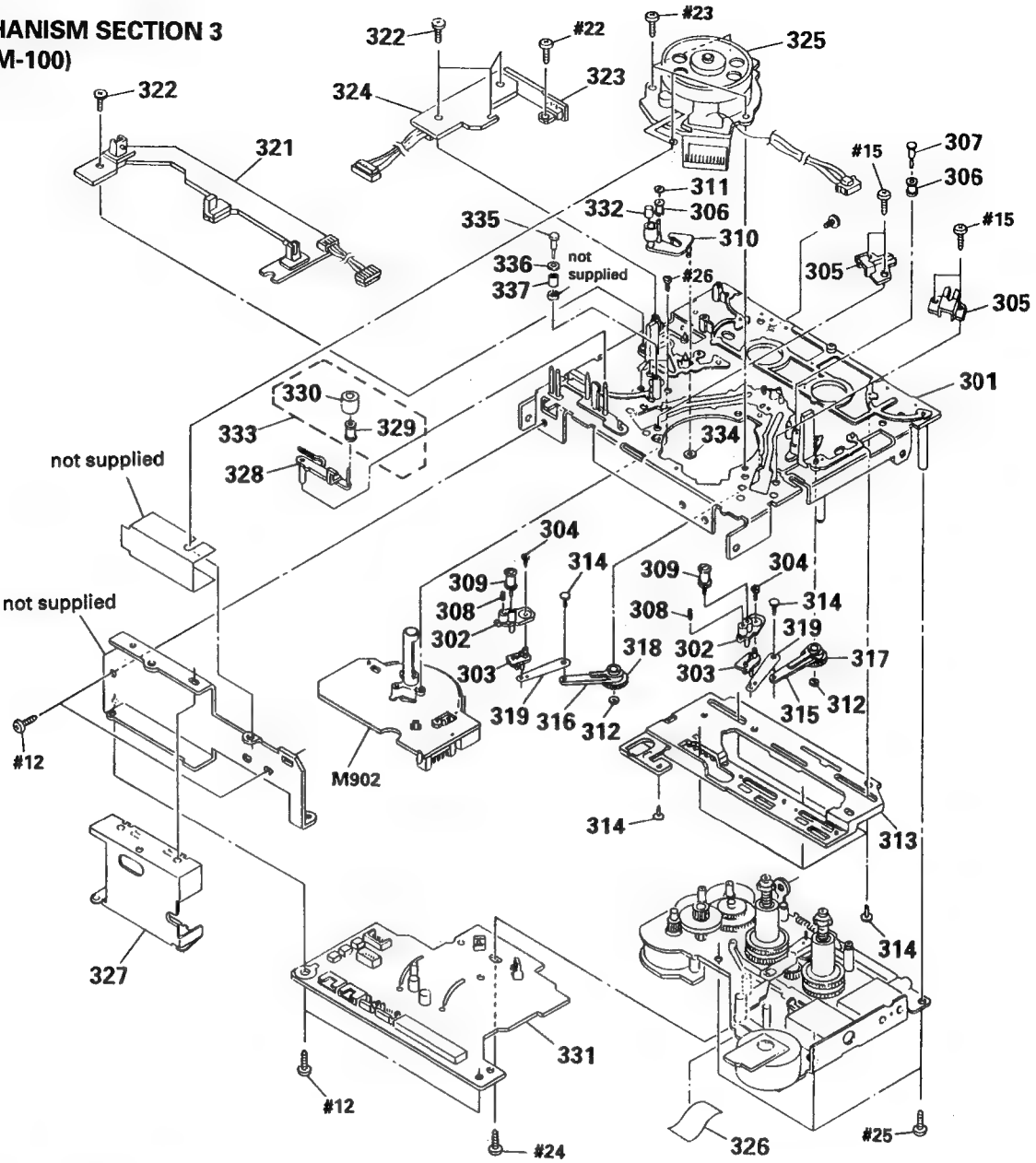
Ref. No.		Part No.	Description	Remarks
161		4-918-991-01	SCREW, STEP	
162		3-537-214-00	SPRING, COMPRESSION	
163		3-312-161-00	SCREW, STEP, PRECISION	
164		4-931-463-01	SCREW (STEP)	
165		2-236-956-00	SCREW, STEP	
166		4-931-471-01	SCREW (STEP)	
167		4-931-474-01	HOLDER (WINDOW)	
168		4-931-469-01	PLATE, ORNAMENTAL	
169	*	X-4919-020-1	JOINT ASSY	

5-5. MECHANISM SECTION 2



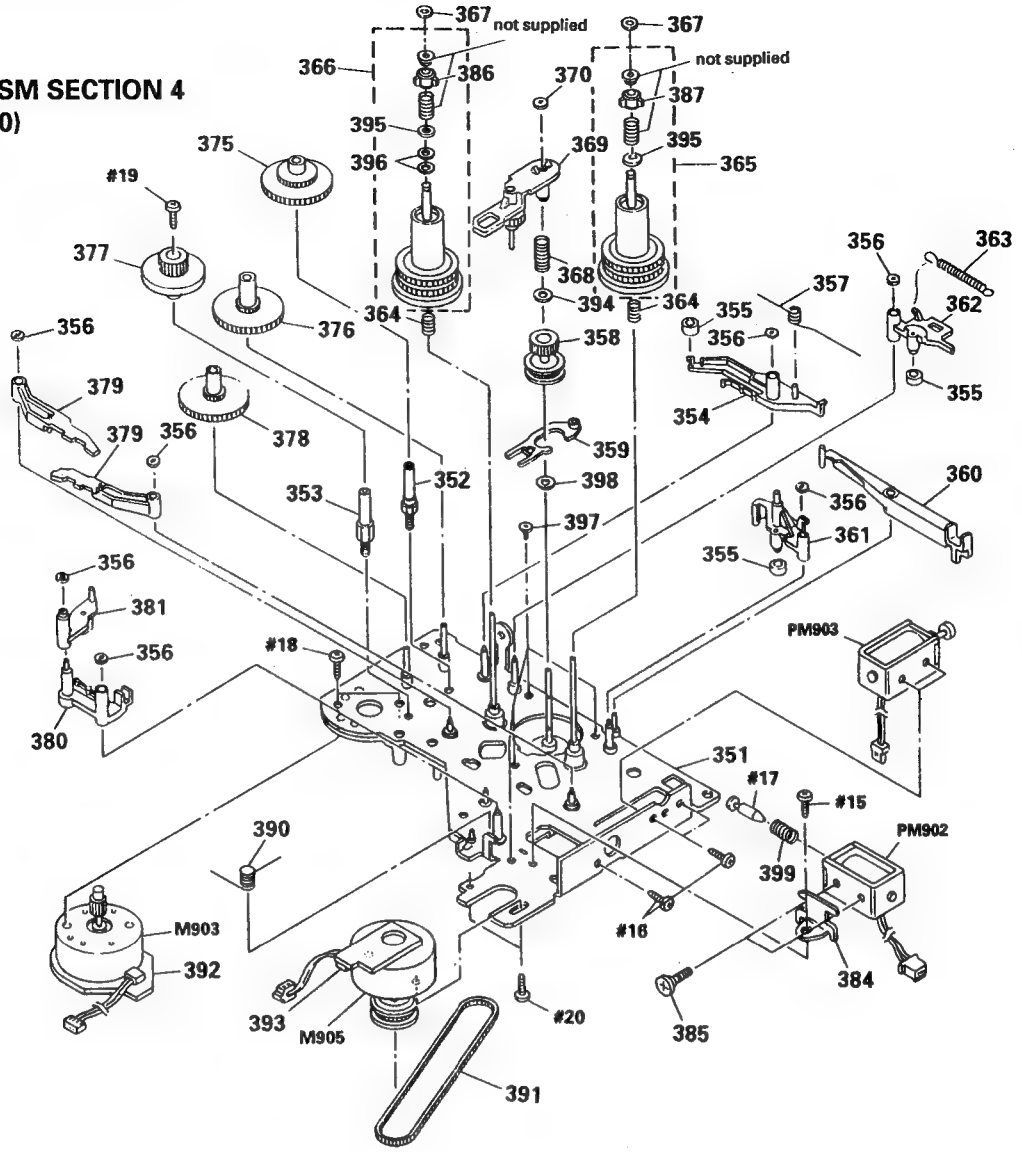
Ref. No.	Part No.	Description	Remarks
201	4-931-470-01	BELT (DRIVING)	
202	3-307-948-21	WASHER, NYLON	
203	4-931-459-01	PULLEY	
204	4-931-477-01	GEAR (CAM)	
205	4-932-336-01	SCREW (STEP)	
206	4-931-468-01	SHAFT (PRESS FITTING)	
207	4-931-490-01	LEVER (LINK)	
208	4-931-460-01	ARM (SLIDER)	
209	3-549-810-00	SPRING, TENSION	
210	4-931-492-01	SLIDER (CAM)	
212	* X-4919-023-1	PLATE ASSY, SIDE	
213	9-911-863-XX	SPACER	
214	3-537-215-00	SPRING, COMPRESSION	
215	* 1-639-646-11	MOTOR BOARD	
216	* 1-639-647-11	SW (IN) BOARD	
217	* 1-639-648-11	SW (OUT) BOARD	
218	4-936-626-01	SHAFT (ARM PRESS FITTING)	
S11	1-570-975-11	SWITCH, SLIDE (CASSETTE TABLE IN)	
S12	1-572-247-11	SWITCH, SLIDE (CASSETTE TABLE OUT)	
M901	A-2003-448-A	MOTOR ASSY (CASSETTE COMPARTMENT)	

5-6. MECHANISM SECTION 3 (DATM-100)



Ref. No.	Part No.	Description	Remarks
301	* 3-368-462-01	CHASSIS (OUTSERT), MECHANIAL	
302	* 3-368-390-01	BASE (#1 GUIDE)	
303	3-368-409-01	JOINT (#1 GUIDE)	
304	3-368-413-01	SCREW, +P (1) B1.4X2.5	
305	* 3-368-442-01	CATCHER	
306	3-368-399-01	GUIDE, ROLLER	
307	3-368-428-01	SHAFT (ROLLER GUIDE)	
308	3-368-436-01	SPRING (#1 GUIDE), COMPRESSION	
309	X-3337-643-1	GUIDE (RIC) ASSY, ROLLER	
310	X-3363-025-1	PINCH (LEVER) ASSY	
311	3-315-384-31	WASHER, STOPPER	
312	3-368-398-01	BUSHING	
313	* A-2003-708-A	SLIDER ASSY, CAM	
314	3-372-761-01	SCREW (M1.7X4), TAPPING	
315	3-368-427-01	LEVER (LOAD-T)	
316	3-368-426-01	LEVER (LOAD-S)	
317	3-368-444-01	GEAR (LOAD-T)	
318	3-368-443-01	GEAR (LOAD-S)	
319	3-368-415-01	SHAFT (LOAD LEVER JOINT)	
321	* 1-639-305-11	TOP END SENSOR BOARD	
323	* 1-639-301-11	RGN SW BOARD	
324	* 1-639-306-11	CAM SLIDER BOARD	
325	8-848-567-11	DRUM ASSY DOU-03A	
326	9-911-835-XX	SPACER	
327	* A-2001-587-A	RF COMPLETE ASSY	
328	3-368-459-01	LEVER (CLEANER)	
329	3-353-812-01	COLLAR (ROLLER)	
330	3-352-518-01	ROLLER (CLEANER)	
331	* A-2056-488-A	DRUM DRIVE BOARD, COMPLETE	
332	3-337-626-01	CAP, PINCH ROLLER	
333	X-3337-655-1	ROLLER (CLEANER) ASSY	
334	3-321-813-01	WASHER	
335	3-375-209-01	SHAFT (FIXED GUIDE)	
336	3-337-677-01	FLANGE	
337	3-337-676-01	GUIDE, FIXED	
M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	

5-7. MECHANISM SECTION 4 (DATM-100)



Ref. No.	Part No.	Description	Remarks
351	* A-2003-857-A	CHASSIS (REEL) ASSY	
352	* 3-368-420-01	SHAFT (CAM DRIVE GEAR C)	
353	* 3-368-419-01	SHAFT (CAM DRIVE GEAR D)	
354	* 3-368-455-01	LEVER (GEAR LOCK)	
355	3-368-418-01	TUBE (BREAK)	
356	3-368-398-01	BUSHING	
357	3-368-430-01	SPRING (GEAR LOCK)	
358	X-3363-022-1	GEAR (REEL DRIVE) ASSY	
359	* 3-368-411-01	SLIDER (REEL LOCK)	
360	* 3-368-453-01	LEVER (BRAKE SOLENOID)	
361	* 3-368-447-01	LEVER (BRAKE S)	
362	* 3-368-446-01	LEVER (BRAKE T)	
363	3-368-438-01	SPRING (BREAK), TENSION	
364	3-368-432-01	SPRING (FF/REW), COMPRESSION	
365	A-2003-709-C	TABLE (S) ASSY, REEL	
366	A-2003-710-B	TABLE (T) ASSY, REEL	
367	3-578-224-00	WASHER	
368	3-368-435-01	SPRING (FR LEVER), COMPRESSION	
369	X-3364-581-1	LEVER (F/R) ASSY	
370	3-315-384-31	WASHER, STOPPER	
375	3-368-421-01	GEAR (CAM DRIVE C)	
376	3-373-039-01	GEAR (CAM DRIVE B)	
377	3-368-403-01	GEAR (CAM DRIVE D)	
378	3-368-402-01	GEAR (CAM DRIVE A, B)	
379	X-3363-024-1	LEVER (BT) ASSY	
380	* 3-368-451-01	LEVER (BT SOLENOID)	
381	* 3-368-454-01	LEVER (BT SELECTION)	
384	* 3-368-416-01	BRACKET (B.T SOLENOID)	
385	3-368-423-01	SCREW (M2.6), STEP	
386	2-623-736-01	CLAW (C) (LEFT), REEL	
387	2-623-752-01	CLAW (C) (RIGHT), REEL	
390	3-368-431-01	SPRING (B.T SOLENOID)	
391	3-368-417-01	BELT (170TN10-1.0T), TIMING	
392	* 1-639-303-11	CAM MOTOR BOARD	
393	* 1-639-304-11	REEL MOTOR BOARD	
394	3-738-212-21	RETAINER, THRUST, REEL TABLE	
395	3-701-443-11	WASHER	
396	3-701-443-21	WASHER, 5 DIA.	
397	2-623-756-01	SCREW, (B1.7X3), TAPPING	
398	3-701-436-01	WASHER, 1.6	
399	3-370-480-01	SPRING (BT), COMPRESSION	
M903	X-3363-109-1	MOTOR ASSY (CAM)	
M905	X-3363-110-1	MOTOR ASSY (REEL)	
PM902	1-454-536-11	SOLENOID, PLUNGER (BT CONTROL)	
PM903	1-454-535-11	SOLENOID, PLUNGER (BRAKE)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- G : Germany model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF :μF
- COILS

BALANCE VOL

Ref. No.	Part No.	Description			Remarks
	* 1-639-326-11	BALANCE VOL BOARD			
		**********			
		⟨ CONNECTOR ⟩			
CN102	* 1-564-507-11	PLUG, CONNECTOR 4P			
		⟨ RESISTOR ⟩			
R101	1-259-462-11	CARBON	27K	5% 1/6W	
R201	1-259-462-11	CARBON	27K	5% 1/6W	
		⟨ VARIABLE RESISTOR ⟩			
RV101	1-238-687-11	RES, VAR, CARBON 50K/50K (BALANCE)			

CAM MOTOR

Ref. No.	Part No.	Description			Remarks
	* 1-639-303-11	CAM MOTOR BOARD			
		**********			
		⟨ CAPACITOR ⟩			
C06	1-163-077-00	CERAMIC CHIP	0.1uF	10% 25V	
		⟨ MOTOR ⟩			
M903	X-3363-109-1	MOTOR ASSY (CAM)			

CAM SLIDER

Ref. No.	Part No.	Description			Remarks
	* 1-639-306-11	CAM SLIDER BOARD			
		**********			
		⟨ CHIP JUMPER ⟩			
JW04	1-216-296-00	METAL CHIP	0	5% 1/8W	
JW05	1-216-296-00	METAL CHIP	0	5% 1/8W	
		⟨ SWITCH ⟩			
SW1	1-570-953-11	SWITCH, PUSH (1 KEY) (STOP DET)			
SW2	1-570-953-11	SWITCH, PUSH (1 KEY) (FWD DET)			

CONTROL SW

Ref. No.	Part No.	Description			Remarks
	* A-2006-669-A	CONTROL SW BOARD, COMPLETE			
		**********			
	9-911-839-XX	CUSHION			
	* 4-922-523-01	HOLDER (RIGHT)			
	* 4-922-524-01	HOLDER (LEFT)			
		⟨ CAPACITOR ⟩			
C701	1-161-379-00	CERAMIC	0.01uF	20% 25V	
C702	1-161-379-00	CERAMIC	0.01uF	20% 25V	
C703	1-124-584-00	ELECT	100uF	20% 10V	
C704	1-161-379-00	CERAMIC	0.01uF	20% 25V	
C705	1-161-379-00	CERAMIC	0.01uF	20% 25V	
C706	1-161-379-00	CERAMIC	0.01uF	20% 25V	
		⟨ CONNECTOR ⟩			
CN751	1-568-853-11	SOCKET, CONNECTOR 10P			
CN752	1-568-849-11	SOCKET, CONNECTOR 6P			
		⟨ CIRCUIT BLOCK ⟩			
CP701	1-233-140-11	COMPOSITION CIRCUIT BLOCK	10Ok x 8		
CP702	1-233-140-11	COMPOSITION CIRCUIT BLOCK	10Ok x 8		
CP703	1-233-140-11	COMPOSITION CIRCUIT BLOCK	10Ok x 8		
		⟨ INDICATOR ⟩			
FL701	1-519-672-11	INDICATOR TUBE, FLUORESCENT			
		⟨ IC ⟩			
IC701	8-752-818-86	IC CXP5058H-657Q			
IC702	8-759-995-09	IC MSM6338RS			
IC703	8-752-330-59	IC CXK1011P			
		⟨ TRANSISTOR ⟩			
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q704	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q706	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q707	8-729-119-78	TRANSISTOR 2SC2785-HFE			

CONTROL SW

Ref. No.	Part No.	Description				Remarks
Q708	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q709	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q710	8-729-119-78	TRANSISTOR	2SC2785-HFE			
		⟨ RESISTOR ⟩				
R701	1-249-441-11	CARBON	100K	5%	1/4W	
R702	1-249-441-11	CARBON	100K	5%	1/4W	
R703	1-249-441-11	CARBON	100K	5%	1/4W	
R704	1-249-441-11	CARBON	100K	5%	1/4W	
R705	1-249-441-11	CARBON	100K	5%	1/4W	
R706	1-249-441-11	CARBON	100K	5%	1/4W	
R707	1-249-441-11	CARBON	100K	5%	1/4W	
R708	1-249-441-11	CARBON	100K	5%	1/4W	
R709	1-249-441-11	CARBON	100K	5%	1/4W	
R710	1-249-441-11	CARBON	100K	5%	1/4W	
R715	1-249-429-11	CARBON	10K	5%	1/4W	
R716	1-249-422-11	CARBON	2.7K	5%	1/4W	
R720	1-249-429-11	CARBON	10K	5%	1/4W	
R721	1-249-422-11	CARBON	2.7K	5%	1/4W	
R725	1-249-429-11	CARBON	10K	5%	1/4W	
R726	1-249-422-11	CARBON	2.7K	5%	1/4W	
R730	1-249-429-11	CARBON	10K	5%	1/4W	
R733	1-249-429-11	CARBON	10K	5%	1/4W	
R734	1-249-422-11	CARBON	2.7K	5%	1/4W	
R735	1-249-424-11	CARBON	3.9K	5%	1/4W	
R736	1-249-429-11	CARBON	10K	5%	1/4W	
R737	1-249-422-11	CARBON	2.7K	5%	1/4W	
R738	1-249-424-11	CARBON	3.9K	5%	1/4W	
R739	1-249-428-11	CARBON	8.2K	5%	1/4W	
R740	1-249-434-11	CARBON	27K	5%	1/4W	
R741	1-249-429-11	CARBON	10K	5%	1/4W	
R742	1-249-422-11	CARBON	2.7K	5%	1/4W	
R743	1-249-424-11	CARBON	3.9K	5%	1/4W	
R744	1-249-428-11	CARBON	8.2K	5%	1/4W	
R745	1-249-434-11	CARBON	27K	5%	1/4W	
R746	1-249-429-11	CARBON	10K	5%	1/4W	
R747	1-249-422-11	CARBON	2.7K	5%	1/4W	
R751	1-249-437-11	CARBON	47K	5%	1/4W	
R752	1-249-437-11	CARBON	47K	5%	1/4W	
R753	1-249-437-11	CARBON	47K	5%	1/4W	
R754	1-249-437-11	CARBON	47K	5%	1/4W	
R755	1-249-437-11	CARBON	47K	5%	1/4W	
R756	1-249-437-11	CARBON	47K	5%	1/4W	
R757	1-249-437-11	CARBON	47K	5%	1/4W	
R758	1-249-437-11	CARBON	47K	5%	1/4W	
R759	1-249-437-11	CARBON	47K	5%	1/4W	
R760	1-249-437-11	CARBON	47K	5%	1/4W	
R761	1-249-437-11	CARBON	47K	5%	1/4W	
R762	1-249-437-11	CARBON	47K	5%	1/4W	
R763	1-249-437-11	CARBON	47K	5%	1/4W	
R764	1-249-437-11	CARBON	47K	5%	1/4W	
R798	1-249-427-11	CARBON	6.8K	5%	1/4W	

DRUM DRIVE

Ref. No.	Part No.	Description				Remarks
		⟨ SWITCH ⟩				
S705	1-554-937-11	SWITCH, KEY BOARD (SKIP ID WRITE)				
S706	1-554-937-11	SWITCH, KEY BOARD (SKIP ID ERASE)				
S710	1-554-937-11	SWITCH, KEY BOARD (START ID WRITE)				
S711	1-554-937-11	SWITCH, KEY BOARD (START ID ERASE)				
S715	1-554-937-11	SWITCH, KEY BOARD (START ID AUTO)				
S716	1-554-937-11	SWITCH, KEY BOARD (START ID RENUMBER)				
S724	1-554-937-11	SWITCH, KEY BOARD (COUNTER RESET)				
S725	1-554-937-11	SWITCH, KEY BOARD (COUNTER MODE)				
S726	1-554-937-11	SWITCH, KEY BOARD (REW ◀◀)				
S727	1-554-937-11	SWITCH, KEY BOARD (FF ▶▶)				
S728	1-554-937-11	SWITCH, KEY BOARD (REC ○)				
S729	1-554-937-11	SWITCH, KEY BOARD (PAUSE ▮▮)				
S730	1-554-937-11	SWITCH, KEY BOARD (REC MUTE ●)				
S731	1-554-937-11	SWITCH, KEY BOARD (OPEN/CLOSE ⏏)				
S732	1-554-937-11	SWITCH, KEY BOARD (STOP ■)				
S733	1-554-937-11	SWITCH, KEY BOARD (PLAY ▶)				
S734	1-554-937-11	SWITCH, KEY BOARD (AMS ⏮)				
S735	1-554-937-11	SWITCH, KEY BOARD (AMS ⏭)				
S736	1-554-937-11	SWITCH, KEY BOARD (END ID WRITE)				
S737	1-554-937-11	SWITCH, KEY BOARD (END ID ERASE)				
		⟨ CRYSTAL ⟩				
X701	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)				
		**********				
	* A-2056-488-A	DRUM DRIVE BOARD, COMPLETE				
		**********				
	* 3-343-491-01	HOLDER (S SENSOR B)				
	4-870-539-00	PLATE, GROUND				
		⟨ CAPACITOR ⟩				
C01	1-124-584-00	ELECT	100uF	20%	10V	
C02	1-126-157-11	ELECT	10uF	20%	16V	
C03	1-124-257-00	ELECT	2.2uF	20%	50V	
C04	1-163-013-11	CERAMIC CHIP	0.0022uF	5%	50V	
C05	1-163-013-11	CERAMIC CHIP	0.0022uF	5%	50V	
C08	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C21	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C31	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
		⟨ CONNECTOR ⟩				
CN01	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				
CN02	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P				
CN03	* 1-564-338-00	PIN, CONNECTOR 4P				
CN04	* 1-564-336-00	PIN, CONNECTOR 2P				
CN05	* 1-564-336-61	PIN, CONNECTOR 2P				
CN06	* 1-564-339-00	PIN, CONNECTOR 5P				
CN07	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P				
CN08	* 1-568-872-11	SOCKET, CONNECTOR 30P				
CN09	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P				

When indicating parts by reference number, please include the board name.

DRUM DRIVE HEADPHONE

Ref. No.	Part No.	Description				Remarks
CN10	* 1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P				
		〈 IC 〉				
IC01	8-759-107-68	IC CX20115A				
IC02	8-759-502-80	IC LM358M				
IC03	8-759-502-80	IC LM358M				
		〈 CHIP JUMPER 〉				
JW06	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW07	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW08	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW09	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW10	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW11	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW12	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW13	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW14	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW15	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW16	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW17	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW18	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW19	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW20	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW21	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW22	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW23	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW24	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW25	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW26	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW27	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW28	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW29	1-216-296-00	METAL CHIP	0	5%	1/8W	
JW30	1-216-296-00	METAL CHIP	0	5%	1/8W	
		〈 PHOTO INTERUPTER 〉				
PH01	8-719-939-23	DIODE GP-2S09-C				
PH02	8-719-939-23	DIODE GP-2S09-C				
		〈 TRANSISTOR 〉				
Q01	8-729-100-66	TRANSISTOR 2SC1623				
Q02	8-729-101-07	TRANSISTOR 2SB798-DL				
		〈 RESISTOR 〉				
R01	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R02	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R03	1-216-029-00	METAL CHIP	150	5%	1/10W	
R04	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R05	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R06	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R07	1-216-025-00	METAL CHIP	100	5%	1/10W	
R08	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R09	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R10	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R11	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R12	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R13	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R14	1-216-037-00	METAL CHIP	330	5%	1/10W	
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R22	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R23	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R24	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R25	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R26	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R31	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R32	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R35	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R36	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

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* 1-639-327-11 HEADPHONE BOARD

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〈 CAPACITOR 〉

C180	1-162-290-31	CERAMIC	470PF	10%	50V
C181	1-126-059-11	ELECT	10uF	20%	63V
C280	1-162-290-31	CERAMIC	470PF	10%	50V
C281	1-126-059-11	ELECT	10uF	20%	63V
C451	1-126-024-11	ELECT	220uF	20%	25V
C452	1-126-024-11	ELECT	220uF	20%	25V

〈 DIODE 〉

D401	8-719-200-82	DIODE 11ES2
D402	8-719-200-82	DIODE 11ES2

〈 IC 〉

IC401	8-759-981-98	IC RC4560D-D

〈 JACK 〉

J161	1-565-327-11	JACK, LARGE TYPE 1P (HEADPHONES)

〈 RESISTOR 〉

R128	1-259-468-11	CARBON	47K	5%	1/6W	
R129	1-259-444-11	CARBON	4.7K	5%	1/6W	
R130	1-259-468-11	CARBON	47K	5%	1/6W	
R131	1-259-412-11	CARBON	220	5%	1/6W	
R228	1-259-468-11	CARBON	47K	5%	1/6W	
R229	1-259-444-11	CARBON	4.7K	5%	1/6W	
R230	1-259-468-11	CARBON	47K	5%	1/6W	
R231	1-259-412-11	CARBON	220	5%	1/6W	
R460	⚠ 1-212-857-00	FUSIBLE	10	5%	1/4W	F
R461	⚠ 1-212-857-00	FUSIBLE	10	5%	1/4W	F

〈 VARIABLE RESISTOR 〉

RV103	1-241-537-11	RES, VAR, CARBON 20K/20K (PHONES LEVEL)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

INPUT SW MAIN

Ref. No.	Part No.	Description			Remarks
	* 1-639-328-11	INPUT SW BOARD			
		**********			
		(CONNECTOR)			
CN772	* 1-564-336-00	PIN, CONNECTOR 2P			
		(RESISTOR)			
R713	1-249-428-11	CARBON	8.2K 5%	1/4W	
R714	1-249-434-11	CARBON	27K 5%	1/4W	
		(SWITCH)			
S702	1-572-758-11	SWITCH, ROTARY (INPUT)			
**********					
	* A-2006-671-A	MAIN BOARD, COMPLETE			
		**********			
		(CAPACITOR)			
C102	1-126-233-11	ELECT	22uF	20%	50V
C103	1-136-153-00	FILM	0.01uF	5%	50V
C104	1-136-165-00	FILM	0.1uF	5%	50V
C105	1-136-165-00	FILM	0.1uF	5%	50V
C106	1-136-153-00	FILM	0.01uF	5%	50V
C110	1-136-439-11	FILM	330PF	5%	630V
C111	1-136-439-11	FILM	330PF	5%	630V
C112	1-136-437-11	FILM	220PF	5%	630V
C113	1-136-437-11	FILM	220PF	5%	630V
C114	1-136-433-11	FILM	100PF	5%	630V
C115	1-136-433-11	FILM	100PF	5%	630V
C116	1-130-475-00	MYLAR	0.0022uF	5%	50V
C117	1-130-472-00	MYLAR	0.0012uF	5%	50V
C118	1-130-479-00	MYLAR	0.0047uF	5%	50V
C120	1-126-023-11	ELECT	100uF	20%	25V
C202	1-126-233-11	ELECT	22uF	20%	50V
C203	1-136-153-00	FILM	0.01uF	5%	50V
C204	1-136-165-00	FILM	0.1uF	5%	50V
C205	1-136-165-00	FILM	0.1uF	5%	50V
C206	1-136-153-00	FILM	0.01uF	5%	50V
C210	1-136-439-11	FILM	330PF	5%	630V
C211	1-136-439-11	FILM	330PF	5%	630V
C212	1-136-437-11	FILM	220PF	5%	630V
C213	1-136-437-11	FILM	220PF	5%	630V
C214	1-136-433-11	FILM	100PF	5%	630V
C215	1-136-433-11	FILM	100PF	5%	630V
C216	1-130-475-00	MYLAR	0.0022uF	5%	50V
C217	1-130-472-00	MYLAR	0.0012uF	5%	50V
C218	1-130-479-00	MYLAR	0.0047uF	5%	50V
C220	1-126-023-11	ELECT	100uF	20%	25V
C300	1-162-294-31	CERAMIC	0.001uF	10%	50V
C301	1-130-834-00	FILM	1uF	10%	63V
C302	1-164-159-11	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description			Remarks
C303	1-162-211-31	CERAMIC	33PF	5%	50V
C304	1-126-059-11	ELECT	10uF	20%	63V
C305	1-136-153-00	FILM	0.01uF	5%	50V
C306	1-164-159-11	CERAMIC	0.1uF		50V
C307	1-126-022-11	ELECT	47uF	20%	10V
C309	1-124-983-11	ELECT	330uF	20%	6.3V
C312	1-126-022-11	ELECT	47uF	20%	10V
C313	1-126-023-11	ELECT	100uF	20%	25V
C314	1-162-199-31	CERAMIC	10PF	5%	50V
C315	1-162-294-31	CERAMIC	0.001uF	10%	50V
C316	1-162-199-31	CERAMIC	10PF	5%	50V
C317	1-162-201-31	CERAMIC	12PF	5%	50V
C318	1-162-201-31	CERAMIC	12PF	5%	50V
C319	1-164-159-11	CERAMIC	0.1uF		50V
C320	1-130-834-00	FILM	1uF	10%	63V
C321	1-136-165-00	FILM	0.1uF	5%	50V
C322	1-164-159-11	CERAMIC	0.1uF		50V
C323	1-162-206-31	CERAMIC	20PF	5%	50V
C324	1-164-159-11	CERAMIC	0.1uF		50V
C325	1-126-022-11	ELECT	47uF	20%	10V
C326	1-162-201-31	CERAMIC	12PF	5%	50V
C327	1-162-201-31	CERAMIC	12PF	5%	50V
C328	1-124-903-11	ELECT	1uF	20%	50V
C329	1-162-294-31	CERAMIC	0.001uF	10%	50V
C330	1-162-294-31	CERAMIC	0.001uF	10%	50V
C331	1-162-294-31	CERAMIC	0.001uF	10%	50V
C332	1-136-153-00	FILM	0.01uF	5%	50V
C333	1-130-473-00	MYLAR	0.0015uF	5%	50V
C334	1-136-158-00	FILM	0.027uF	5%	50V
C335	1-136-153-00	FILM	0.01uF	5%	50V
C336	1-130-473-00	MYLAR	0.0015uF	5%	50V
C337	1-136-158-00	FILM	0.027uF	5%	50V
C338	1-162-306-11	CERAMIC	0.01uF	20%	16V
C339	1-162-306-11	CERAMIC	0.01uF	20%	16V
C340	1-162-290-31	CERAMIC	470PF	10%	50V
C341	1-162-306-11	CERAMIC	0.01uF	20%	16V
C342	1-126-059-11	ELECT	10uF	20%	63V
C343	1-162-306-11	CERAMIC	0.01uF	20%	16V
C344	1-162-306-11	CERAMIC	0.01uF	20%	16V
C347	1-162-294-31	CERAMIC	0.001uF	10%	50V
C348	1-126-059-11	ELECT	10uF	20%	63V
C362	1-126-043-11	ELECT	0.47uF	20%	50V
C363	1-126-059-11	ELECT	10uF	20%	63V
C401	1-136-165-00	FILM	0.1uF	5%	50V
C402	1-136-165-00	FILM	0.1uF	5%	50V
C405	1-136-165-00	FILM	0.1uF	5%	50V
C406	1-126-058-11	ELECT	4.7uF	20%	63V
C407	1-136-165-00	FILM	0.1uF	5%	50V
C408	1-136-165-00	FILM	0.1uF	5%	50V
C409	1-126-104-11	ELECT	470uF	20%	35V
C410	1-136-165-00	FILM	0.1uF	5%	50V
C411	1-126-104-11	ELECT	470uF	20%	35V

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description			Remarks
C412	1-136-165-00	FILM	0.1uF	5%	50V
C413	1-126-104-11	ELECT	470uF	20%	35V
C414	1-126-104-11	ELECT	470uF	20%	35V
C415	1-136-165-00	FILM	0.1uF	5%	50V
C416	1-136-165-00	FILM	0.1uF	5%	50V
C417	1-164-159-11	CERAMIC	0.1uF		50V
C418	1-136-165-00	FILM	0.1uF	5%	50V
C419	1-136-165-00	FILM	0.1uF	5%	50V
C420	1-136-165-00	FILM	0.1uF	5%	50V
C421	1-136-165-00	FILM	0.1uF	5%	50V
C422	1-126-023-11	ELECT	100uF	20%	25V
C423	1-126-023-11	ELECT	100uF	20%	25V
C425	1-126-104-11	ELECT	470uF	20%	35V
C426	1-136-165-00	FILM	0.1uF	5%	50V
C427	1-136-165-00	FILM	0.1uF	5%	50V
C428	1-136-165-00	FILM	0.1uF	5%	50V
C429	1-136-165-00	FILM	0.1uF	5%	50V
C430	1-126-059-11	ELECT	10uF	20%	63V
C431	1-126-059-11	ELECT	10uF	20%	63V
C432	1-124-273-00	ELECT	3.3uF	20%	50V
C435	1-126-023-11	ELECT	100uF	20%	25V
C436	1-126-023-11	ELECT	100uF	20%	25V
C437	1-124-983-11	ELECT	330uF	20%	6.3V
C438	1-124-983-11	ELECT	330uF	20%	6.3V
C439	1-164-159-11	CERAMIC	0.1uF		50V
C440	1-124-983-11	ELECT	330uF	20%	6.3V
C441	1-164-159-11	CERAMIC	0.1uF		50V
C442	1-164-159-11	CERAMIC	0.1uF		50V
C444	1-164-159-11	CERAMIC	0.1uF		50V
C446	1-164-159-11	CERAMIC	0.1uF		50V
C447	1-164-159-11	CERAMIC	0.1uF		50V
C448	1-164-159-11	CERAMIC	0.1uF		50V
C449	1-164-159-11	CERAMIC	0.1uF		50V
C450	1-136-165-00	FILM	0.1uF	5%	50V
C451	1-136-165-00	FILM	0.1uF	5%	50V
C460	1-164-159-11	CERAMIC	0.1uF		50V
C461	1-164-159-11	CERAMIC	0.1uF		50V
C462	1-164-159-11	CERAMIC	0.1uF		50V
C470	1-164-159-11	CERAMIC	0.1uF		50V
C471	1-164-159-11	CERAMIC	0.1uF		50V
C472	1-164-159-11	CERAMIC	0.1uF		50V
C473	1-164-159-11	CERAMIC	0.1uF		50V
C499	1-162-290-31	CERAMIC	470PF	10%	50V
C501	1-136-165-00	FILM	0.1uF	5%	50V
C503	1-162-199-31	CERAMIC	10PF	5%	50V
C504	1-126-023-11	ELECT	100uF	20%	25V
C505	1-162-211-31	CERAMIC	33PF	5%	50V
C506	1-162-199-31	CERAMIC	10PF	5%	50V
C507	1-136-153-00	FILM	0.01uF	5%	50V
C508	1-136-158-00	FILM	0.027uF	5%	50V
C509	1-126-023-11	ELECT	100uF	20%	25V
C511	1-136-165-00	FILM	0.1uF	5%	50V
C512	1-164-159-11	CERAMIC	0.1uF		50V
C513	1-126-023-11	ELECT	100uF	20%	25V
C514	1-136-165-00	FILM	0.1uF	5%	50V
C515	1-136-169-00	FILM	0.22uF	5%	50V
C516	1-136-165-00	FILM	0.1uF	5%	50V
C517	1-164-159-11	CERAMIC	0.1uF		50V

〈 CONNECTOR 〉

CN104	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN107	* 1-564-509-11	PLUG, CONNECTOR 6P	
CN301	* 1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN308	* 1-564-339-00	PIN, CONNECTOR 5P	
CN333	* 1-564-514-11	PLUG, CONNECTOR 11P	
CN501	* 1-564-716-11	PIN, CONNECTOR (SMALL TYPE)14P	
CN508	* 1-568-933-11	SOCKET, CONNECTOR 30P	
CN571	* 1-568-829-11	SOCKET, CONNECTOR 10P	
CN572	* 1-568-825-11	SOCKET, CONNECTOR 6P	

〈 DIODE 〉

D101	8-719-107-94	DIODE	1SS202-1
D102	8-719-107-94	DIODE	1SS202-1
D201	8-719-107-94	DIODE	1SS202-1
D202	8-719-107-94	DIODE	1SS202-1
D306	8-719-200-82	DIODE	11ES2
D307	8-719-107-94	DIODE	1SS202-1
D308	8-719-107-94	DIODE	1SS202-1
D314	8-719-200-82	DIODE	11ES2
D323	8-719-107-94	DIODE	1SS202-1
D350	8-719-107-94	DIODE	1SS202-1
D403	8-719-107-94	DIODE	1SS202-1
D404	8-719-210-21	DIODE	11EQS04
D501	8-719-918-45	DIODE	KV1310
D503	8-719-903-27	DIODE	1SS168

〈 INDUCTOR 〉

FB301	1-410-397-21	FRRITE BEAD

〈 IC 〉

IC101	8-759-602-83	IC	M5238P
IC201	8-759-602-83	IC	M5238P
IC301	8-759-917-18	IC	SN74HCU04N
IC302	8-759-232-01	IC	TC74HC00AP
IC303	8-759-917-18	IC	SN74HCU04N
IC304	8-759-135-80	IC	uPC358C
IC307	8-752-339-43	IC	CXD2601AQ
IC308	8-759-906-24	IC	SN74LS624N
IC310	8-752-337-80	IC	CXK58257AM-12L
IC311	8-752-832-76	IC	CXP80524-046Q
IC312	8-752-833-31	IC	CXP80524-048Q
IC316	8-759-135-80	IC	uPC358C
IC317	8-759-135-80	IC	uPC358C
IC318	8-759-135-80	IC	uPC358C

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks
IC319	8-759-633-65	IC M54641L	
IC320	8-759-633-65	IC M54641L	
IC321	8-759-971-12	IC PST529E	
IC322	8-759-231-53	IC M5F7805L	
IC331	8-749-921-11	IC GP1F32R	
IC332	8-749-921-12	IC GP1F32T	
IC333	8-759-917-18	IC SN74HCU04N	
IC354	8-759-900-72	IC NE5532P	
IC355	8-759-900-72	IC NE5532P	
IC356	8-759-945-58	IC RC4558P	
IC357	8-759-231-53	IC M5F7805L	
IC358	8-759-245-79	IC M5F7905L	
IC359	8-759-504-36	IC AK5339	
IC360	8-759-504-50	IC LF412CN/SL161841	
IC362	8-752-344-10	IC CXD2561M-1	
IC363	8-752-342-65	IC CXD2560M	
IC374	8-759-634-55	IC M5F7805L-720	
IC375	8-759-900-72	IC NE5532P	
IC376	8-759-900-72	IC NE5532P	
IC431	8-759-925-78	IC SN74HC10NS	
IC432	8-759-995-76	IC PST529C	
IC501	8-759-604-30	IC M5F7808	
IC502	8-759-233-64	IC TC74HCU04AF	
IC503	8-759-242-57	IC TC74HC4020AF	
IC504	8-759-250-81	IC TC5081AP	
		⟨ JACK ⟩	
J101	1-568-751-61	JACK, PIN (2P SHIELD TYPE)(LINE IN)	
J102	1-568-751-61	JACK, PIN (2P SHIELD TYPE)(LINE OUT)	
J191	1-568-750-21	JACK, PIN (1P SHIELD TYPE) (DIGITAL IN COAXIAL)	
		⟨ COIL ⟩	
L301	1-410-509-11	INDUCTOR 10uH	
L302	1-410-498-11	INDUCTOR 1.2uH	
L303	1-410-509-11	INDUCTOR 10uH	
L305	1-410-515-11	INDUCTOR 33uH	
L306	1-410-509-11	INDUCTOR 10uH	
L501	1-424-604-11	COIL 1.6uH	
L502	1-410-324-11	INDUCTOR 4.7uH	
L503	1-410-324-11	INDUCTOR 4.7uH	
L504	1-410-324-11	INDUCTOR 4.7uH	
L505	1-424-604-11	COIL 1.6uH	
		⟨ TRANSISTOR ⟩	
Q301	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q302	8-729-801-93	TRANSISTOR 2SD1387	
Q311	8-729-900-80	TRANSISTOR DTC114ES	
Q312	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q313	8-729-900-61	TRANSISTOR DTA114ES	
Q318	8-729-900-80	TRANSISTOR DTC114ES	
Q319	8-729-900-80	TRANSISTOR DTC114ES	
Q320	8-729-927-11	TRANSISTOR 2SA1585S-QR	

Ref. No.	Part No.	Description	Remarks
Q321	8-729-927-12	TRANSISTOR 2SC4115S-QR	
Q333	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q334	8-729-920-68	TRANSISTOR 2SA933S-QR	
Q335	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q336	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q337	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q338	8-729-927-12	TRANSISTOR 2SC4115S-QR	
Q339	8-729-927-12	TRANSISTOR 2SC4115S-QR	
Q340	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q341	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q342	8-729-209-15	TRANSISTOR 2SD2012	
Q343	8-729-920-68	TRANSISTOR 2SA933S-QR	
Q432	8-729-900-80	TRANSISTOR DTC114ES	
Q433	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q434	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q435	8-729-900-61	TRANSISTOR DTA114ES	
Q436	8-729-900-80	TRANSISTOR DTC114ES	
Q437	8-729-900-61	TRANSISTOR DTA114ES	
Q438	8-729-900-80	TRANSISTOR DTC114ES	
Q439	8-729-900-80	TRANSISTOR DTC114ES	
Q440	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q499	8-729-900-80	TRANSISTOR DTC114ES	
Q501	8-729-200-56	TRANSISTOR 2SK241-GR	
Q502	8-729-200-56	TRANSISTOR 2SK241-GR	
Q503	8-729-900-61	TRANSISTOR DTA114ES	
		⟨ RESISTOR ⟩	
R102	1-247-903-00	CARBON 1M 5% 1/4W	
R103	1-249-417-11	CARBON 1K 5% 1/4W	
R104	1-249-433-11	CARBON 22K 5% 1/4W	
R105	1-249-435-11	CARBON 33K 5% 1/4W	
R106	1-249-403-11	CARBON 68 5% 1/4W	
R107	1-247-854-11	CARBON 9.1K 5% 1/4W	
R108	1-247-854-11	CARBON 9.1K 5% 1/4W	
R109	1-247-854-11	CARBON 9.1K 5% 1/4W	
R110	1-247-854-11	CARBON 9.1K 5% 1/4W	
R111	1-249-425-11	CARBON 4.7K 5% 1/4W	
R112	1-249-425-11	CARBON 4.7K 5% 1/4W	
R113	1-249-425-11	CARBON 4.7K 5% 1/4W	
R114	1-249-425-11	CARBON 4.7K 5% 1/4W	
R115	1-249-430-11	CARBON 12K 5% 1/4W	
R116	1-249-430-11	CARBON 12K 5% 1/4W	
R117	1-249-426-11	CARBON 5.6K 5% 1/4W	
R118	1-249-426-11	CARBON 5.6K 5% 1/4W	
R119	1-249-426-11	CARBON 5.6K 5% 1/4W	
R120	1-249-426-11	CARBON 5.6K 5% 1/4W	
R121	1-249-405-11	CARBON 100 5% 1/4W	
R122	1-249-419-11	CARBON 1.5K 5% 1/4W	
R123	1-249-419-11	CARBON 1.5K 5% 1/4W	
R124	1-249-441-11	CARBON 100K 5% 1/4W	
R125	1-249-409-11	CARBON 220 5% 1/4W	
R126	1-249-429-11	CARBON 10K 5% 1/4W	
R127	1-249-405-11	CARBON 100 5% 1/4W	

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description				Remarks
R150	1-249-433-11	CARBON	22K	5%	1/4W	
R151	1-259-882-11	CARBON	3.3M	5%	1/4W	
R152	1-259-882-11	CARBON	3.3M	5%	1/4W	
R153	1-247-806-11	CARBON	91	5%	1/4W	
R180	1-249-397-11	CARBON	22	5%	1/4W	
R202	1-247-903-00	CARBON	1M	5%	1/4W	
R203	1-249-417-11	CARBON	1K	5%	1/4W	
R204	1-249-433-11	CARBON	22K	5%	1/4W	
R205	1-249-435-11	CARBON	33K	5%	1/4W	
R206	1-249-403-11	CARBON	68	5%	1/4W	
R207	1-247-854-11	CARBON	9.1K	5%	1/4W	
R208	1-247-854-11	CARBON	9.1K	5%	1/4W	
R209	1-247-854-11	CARBON	9.1K	5%	1/4W	
R210	1-247-854-11	CARBON	9.1K	5%	1/4W	
R211	1-249-425-11	CARBON	4.7K	5%	1/4W	
R212	1-249-425-11	CARBON	4.7K	5%	1/4W	
R213	1-249-425-11	CARBON	4.7K	5%	1/4W	
R214	1-249-425-11	CARBON	4.7K	5%	1/4W	
R215	1-249-430-11	CARBON	12K	5%	1/4W	
R216	1-249-430-11	CARBON	12K	5%	1/4W	
R217	1-249-426-11	CARBON	5.6K	5%	1/4W	
R218	1-249-426-11	CARBON	5.6K	5%	1/4W	
R219	1-249-426-11	CARBON	5.6K	5%	1/4W	
R220	1-249-426-11	CARBON	5.6K	5%	1/4W	
R221	1-249-405-11	CARBON	100	5%	1/4W	
R222	1-249-419-11	CARBON	1.5K	5%	1/4W	
R223	1-249-419-11	CARBON	1.5K	5%	1/4W	
R224	1-249-441-11	CARBON	100K	5%	1/4W	
R225	1-249-409-11	CARBON	220	5%	1/4W	
R226	1-249-429-11	CARBON	10K	5%	1/4W	
R227	1-249-405-11	CARBON	100	5%	1/4W	
R250	1-249-433-11	CARBON	22K	5%	1/4W	
R251	1-259-882-11	CARBON	3.3M	5%	1/4W	
R252	1-259-882-11	CARBON	3.3M	5%	1/4W	
R253	1-247-806-11	CARBON	91	5%	1/4W	
R280	1-249-397-11	CARBON	22	5%	1/4W	
R301	1-247-804-11	CARBON	75	5%	1/4W	
R302	1-249-437-11	CARBON	47K	5%	1/4W	
R303	1-249-421-11	CARBON	2.2K	5%	1/4W	
R304	1-249-441-11	CARBON	100K	5%	1/4W	
R305	1-249-421-11	CARBON	2.2K	5%	1/4W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-249-417-11	CARBON	1K	5%	1/4W	
R308	1-249-425-11	CARBON	4.7K	5%	1/4W	
R309	1-249-421-11	CARBON	2.2K	5%	1/4W	
R310	1-249-441-11	CARBON	100K	5%	1/4W	
R311	1-249-429-11	CARBON	10K	5%	1/4W	
R312	1-249-421-11	CARBON	2.2K	5%	1/4W	
R313	1-249-421-11	CARBON	2.2K	5%	1/4W	
R314	1-249-435-11	CARBON	33K	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/4W	
R319	1-249-409-11	CARBON	220	5%	1/4W	

Ref. No.	Part No.	Description				Remarks
R320	1-247-804-11	CARBON	75	5%	1/4W	
R321	1-249-405-11	CARBON	100	5%	1/4W	
R322	1-249-429-11	CARBON	10K	5%	1/4W	
R323	1-249-433-11	CARBON	22K	5%	1/4W	
R324	1-249-433-11	CARBON	22K	5%	1/4W	
R325	1-249-425-11	CARBON	4.7K	5%	1/4W	
R326	1-249-409-11	CARBON	220	5%	1/4W	
R327	1-249-425-11	CARBON	4.7K	5%	1/4W	
R328	1-249-417-11	CARBON	1K	5%	1/4W	
R329	1-249-413-11	CARBON	470	5%	1/4W	
R330	1-249-417-11	CARBON	1K	5%	1/4W	
R331	1-249-429-11	CARBON	10K	5%	1/4W	
R332	1-249-429-11	CARBON	10K	5%	1/4W	
R333	1-249-433-11	CARBON	22K	5%	1/4W	
R334	1-249-425-11	CARBON	4.7K	5%	1/4W	
R335	1-249-425-11	CARBON	4.7K	5%	1/4W	
R336	1-249-425-11	CARBON	4.7K	5%	1/4W	
R337	1-249-429-11	CARBON	10K	5%	1/4W	
R338	1-249-433-11	CARBON	22K	5%	1/4W	
R339	1-249-401-11	CARBON	47	5%	1/4W	
R340	1-249-429-11	CARBON	10K	5%	1/4W	
R341	1-249-429-11	CARBON	10K	5%	1/4W	
R342	1-249-429-11	CARBON	10K	5%	1/4W	
R343	1-249-438-11	CARBON	56K	5%	1/4W	
R344	1-249-438-11	CARBON	56K	5%	1/4W	
R345	1-249-438-11	CARBON	56K	5%	1/4W	
R346	1-249-441-11	CARBON	100K	5%	1/4W	
R347	1-249-441-11	CARBON	100K	5%	1/4W	
R348	1-249-441-11	CARBON	100K	5%	1/4W	
R349	1-249-441-11	CARBON	100K	5%	1/4W	
R350	1-249-425-11	CARBON	4.7K	5%	1/4W	
R351	1-249-425-11	CARBON	4.7K	5%	1/4W	
R352	1-249-441-11	CARBON	100K	5%	1/4W	
R353	1-249-441-11	CARBON	100K	5%	1/4W	
R354	1-249-441-11	CARBON	100K	5%	1/4W	
R355	1-249-417-11	CARBON	1K	5%	1/4W	
R356	1-249-417-11	CARBON	1K	5%	1/4W	
R357	1-249-405-11	CARBON	100	5%	1/4W	
R358	1-249-417-11	CARBON	1K	5%	1/4W	
R359	1-249-408-11	CARBON	180	5%	1/4W	
R360	1-249-437-11	CARBON	47K	5%	1/4W	
R361	1-249-437-11	CARBON	47K	5%	1/4W	
R365	1-249-425-11	CARBON	4.7K	5%	1/4W	
R366	1-249-441-11	CARBON	100K	5%	1/4W	
R367	1-249-417-11	CARBON	1K	5%	1/4W	
R368	1-249-417-11	CARBON	1K	5%	1/4W	
R369	1-249-405-11	CARBON	100	5%	1/4W	
R370	1-249-405-11	CARBON	100	5%	1/4W	
R371	1-249-417-11	CARBON	1K	5%	1/4W	
R372	1-249-405-11	CARBON	100	5%	1/4W	
R373	1-249-417-11	CARBON	1K	5%	1/4W	
R374	1-249-417-11	CARBON	1K	5%	1/4W	

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description				Remarks
R375	1-249-405-11	CARBON	100	5%	1/4W	
R376	1-249-417-11	CARBON	1K	5%	1/4W	
R377	1-249-441-11	CARBON	100K	5%	1/4W	
R378	1-249-417-11	CARBON	1K	5%	1/4W	
R379	1-249-401-11	CARBON	47	5%	1/4W	
R380	1-249-411-11	CARBON	330	5%	1/4W	
R381 ⚠	1-215-881-11	METAL OXIDE	15	5%	2W	F
R382	1-249-441-11	CARBON	100K	5%	1/4W	
R383	1-249-401-11	CARBON	47	5%	1/4W	
R384	1-249-437-11	CARBON	47K	5%	1/4W	
R385	1-249-437-11	CARBON	47K	5%	1/4W	
R386	1-249-405-11	CARBON	100	5%	1/4W	
R387	1-249-405-11	CARBON	100	5%	1/4W	
R388	1-249-423-11	CARBON	3.3K	5%	1/4W	
R389	1-249-423-11	CARBON	3.3K	5%	1/4W	
R390	1-249-423-11	CARBON	3.3K	5%	1/4W	
R391	1-249-423-11	CARBON	3.3K	5%	1/4W	
R392	1-249-430-11	CARBON	12K	5%	1/4W	
R393	1-247-864-11	CARBON	24K	5%	1/4W	
R395	1-249-425-11	CARBON	4.7K	5%	1/4W	
R396	1-249-441-11	CARBON	100K	5%	1/4W	
R397	1-249-441-11	CARBON	100K	5%	1/4W	
R398	1-249-441-11	CARBON	100K	5%	1/4W	
R399	1-249-441-11	CARBON	100K	5%	1/4W	
R400	1-249-441-11	CARBON	100K	5%	1/4W	
R401	1-249-441-11	CARBON	100K	5%	1/4W	
R402	1-249-441-11	CARBON	100K	5%	1/4W	
R403	1-249-441-11	CARBON	100K	5%	1/4W	
R404	1-249-441-11	CARBON	100K	5%	1/4W	
R405	1-249-441-11	CARBON	100K	5%	1/4W	
R406	1-249-429-11	CARBON	10K	5%	1/4W	
R407	1-249-429-11	CARBON	10K	5%	1/4W	
R408	1-249-429-11	CARBON	10K	5%	1/4W	
R409	1-249-425-11	CARBON	4.7K	5%	1/4W	
R410	1-249-425-11	CARBON	4.7K	5%	1/4W	
R411	1-249-417-11	CARBON	1K	5%	1/4W	
R412	1-249-441-11	CARBON	100K	5%	1/4W	
R413	1-249-437-11	CARBON	47K	5%	1/4W	
R414	1-249-413-11	CARBON	470	5%	1/4W	
R415	1-249-437-11	CARBON	47K	5%	1/4W	
R416	1-249-437-11	CARBON	47K	5%	1/4W	
R417	1-249-437-11	CARBON	47K	5%	1/4W	
R418	1-249-413-11	CARBON	470	5%	1/4W	
R419	1-249-413-11	CARBON	470	5%	1/4W	
R420	1-249-413-11	CARBON	470	5%	1/4W	
R421	1-249-413-11	CARBON	470	5%	1/4W	
R422	1-249-413-11	CARBON	470	5%	1/4W	
R424	1-249-411-11	CARBON	330	5%	1/4W	
R425	1-249-411-11	CARBON	330	5%	1/4W	
R429	1-249-407-11	CARBON	150	5%	1/4W	
R432	1-249-393-11	CARBON	10	5%	1/4W	
R433	1-216-349-00	CARBON	1	5%	1/2W	

Ref. No.	Part No.	Description				Remarks
R434	1-249-411-11	CARBON	330	5%	1/4W	
R435	1-249-409-11	CARBON	220	5%	1/4W	
R436	1-249-409-11	CARBON	220	5%	1/4W	
R437	1-249-409-11	CARBON	220	5%	1/4W	
R438	1-249-409-11	CARBON	220	5%	1/4W	
R439	1-249-437-11	CARBON	47K	5%	1/4W	
R440	1-249-441-11	CARBON	100K	5%	1/4W	
R441	1-249-441-11	CARBON	100K	5%	1/4W	
R442	1-249-441-11	CARBON	100K	5%	1/4W	
R443	1-249-437-11	CARBON	47K	5%	1/4W	
R444	1-249-417-11	CARBON	1K	5%	1/4W	
R445	1-249-419-11	CARBON	1.5K	5%	1/4W	
R446	1-247-883-00	CARBON	150K	5%	1/4W	
R447	1-249-425-11	CARBON	4.7K	5%	1/4W	
R448	1-249-413-11	CARBON	470	5%	1/4W	
R449	1-249-424-11	CARBON	3.9K	5%	1/4W	
R451	1-247-891-00	CARBON	330K	5%	1/4W	
R460	1-249-421-11	CARBON	2.2K	5%	1/4W	
R461	1-249-441-11	CARBON	100K	5%	1/4W	
R462	1-247-804-11	CARBON	75	5%	1/4W	
R463	1-249-429-11	CARBON	10K	5%	1/4W	
R490	1-249-425-11	CARBON	4.7K	5%	1/4W	
R495	1-249-417-11	CARBON	1K	5%	1/4W	
R497	1-249-429-11	CARBON	10K	5%	1/4W	
R498	1-249-417-11	CARBON	1K	5%	1/4W	
R501	1-249-417-11	CARBON	1K	5%	1/4W	
R502	1-249-429-11	CARBON	10K	5%	1/4W	
R503	1-249-429-11	CARBON	10K	5%	1/4W	
R504	1-249-429-11	CARBON	10K	5%	1/4W	
R505	1-249-428-11	CARBON	8.2K	5%	1/4W	
R506	1-249-441-11	CARBON	100K	5%	1/4W	
R507	1-249-417-11	CARBON	1K	5%	1/4W	
R508	1-249-417-11	CARBON	1K	5%	1/4W	
R509	1-249-417-11	CARBON	1K	5%	1/4W	
R510	1-247-804-11	CARBON	75	5%	1/4W	
R513	1-249-417-11	CARBON	1K	5%	1/4W	
R514	1-249-423-11	CARBON	3.3K	5%	1/4W	
R515	1-249-423-11	CARBON	3.3K	5%	1/4W	
R516	1-249-425-11	CARBON	4.7K	5%	1/4W	
R517	1-249-429-11	CARBON	10K	5%	1/4W	
R518	1-249-417-11	CARBON	1K	5%	1/4W	
R519	1-249-417-11	CARBON	1K	5%	1/4W	
R520	1-247-903-00	CARBON	1M	5%	1/4W	
		〈 RELAY 〉				
RY301	1-515-726-11	RELAY				
		〈 CRYSTAL 〉				
X301	1-567-816-11	VIBRATOR, CRYSTAL (18.816MHz)				
X302	1-567-815-11	VIBRATOR, CRYSTAL (22.5792MHz)				
X303	1-578-667-11	VIBRATOR, CRYSTAL (49.152MHz)				

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

MOTOR POWER RELAY PRIMARY

Ref. No.	Part No.	Description				Remarks
	* 1-639-646-11	MOTOR BOARD				
		**********				
		〈 CAPACITOR 〉				
C01	1-162-851-11	CERAMIC	0.1MF		16V	
		〈 CONNECTOR 〉				
CN01	* 1-564-336-00	PIN, CONNECTOR 2P				
CN02	* 1-564-336-61	PIN, CONNECTOR 2P				
CN03	* 1-564-498-11	PIN, CONNECTOR 5P				
		〈 MOTOR 〉				
M901	A-2003-448-A	MOTOR ASSY (CASSETTE COMPARTMENT)				
**********						
	* A-2006-670-A	POWER BOARD, COMPLETE				
		**********				
⚠	* 1-533-213-31	HOLDER, FUSE				
	7-682-147-15	SCREW, TR				
		〈 CAPACITOR 〉				
C907	1-126-946-11	ELECT	6800uF	20%	25V	
C908	1-164-159-11	CERAMIC	0.1uF		50V	
C909	1-124-473-11	ELECT	1000uF	20%	10V	
C910	1-164-159-11	CERAMIC	0.1uF		50V	
C911	1-164-159-11	CERAMIC	0.1uF		50V	
C912	1-124-473-11	ELECT	1000uF	20%	10V	
C913	1-126-104-11	ELECT	470uF	20%	35V	
C914	1-126-104-11	ELECT	470uF	20%	35V	
C915	1-126-049-11	ELECT	22uF	20%	50V	
C916	1-126-052-11	ELECT	100uF	20%	50V	
C917	1-136-165-00	FILM	0.1uF	5%	50V	
C918	1-130-834-00	FILM	1uF	10%	63V	
C919	1-136-165-00	FILM	0.1uF	5%	50V	
C920	1-128-468-51	ELECT	4700uF		25V	
C921	1-128-468-51	ELECT	4700uF		25V	
C922	1-164-159-11	CERAMIC	0.1uF		50V	
C923	1-164-159-11	CERAMIC	0.1uF		50V	
C924	1-164-159-11	CERAMIC	0.1uF		50V	
C925	1-164-159-11	CERAMIC	0.1uF		50V	
C926	1-126-105-11	ELECT	1000uF	20%	35V	
C927	1-126-105-11	ELECT	1000uF	20%	35V	
		〈 CONNECTOR 〉				
CN905	* 1-560-338-00	PIN, CONNECTOR 7P				
CN906	* 1-560-061-00	PIN, CONNECTOR 3P				
CN931	* 1-564-505-11	PLUG, CONNECTOR 2P				
CN932	* 1-564-511-11	PLUG, CONNECTOR 8P				
CN933	* 1-564-506-11	PLUG, CONNECTOR 3P				

Ref. No.	Part No.	Description				Remarks
		〈 DIODE 〉				
D905	8-719-312-47	DIODE	RBA-406B			
D906	8-719-107-94	DIODE	1SS202-1			
D907	8-719-200-82	DIODE	11ES2			
D908	8-719-200-82	DIODE	11ES2			
D909	8-719-934-15	DIODE	HZS24-3L			
D910	8-719-933-33	DIODE	HZS6A1L			
D911	8-719-200-77	DIODE	10E2N			
D912	8-719-200-77	DIODE	10E2N			
D913	8-719-200-77	DIODE	10E2N			
D914	8-719-200-77	DIODE	10E2N			
D915	8-719-107-94	DIODE	1SS202-1			
D916	8-719-107-94	DIODE	1SS202-1			
		〈 FUSE 〉				
F901	⚠ 1-532-286-00	FUSE, TIME-LAG (T2.5A)				
		〈 IC 〉				
IC901	8-759-148-79	IC	uPC2406HF			
IC902	8-759-231-53	IC	M5F7805L			
IC903	8-759-231-58	IC	M5F7812L			
IC904	8-759-245-86	IC	TA7912S			
		〈 TRANSISTOR 〉				
Q901	8-729-140-97	TRANSISTOR	2SB734-34			
		〈 RESISTOR 〉				
R901	1-249-425-11	CARBON	4.7K	5%	1/4W	
R902	⚠ 1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R903	1-249-421-11	CARBON	2.2K	5%	1/4W	
R904	⚠ 1-212-865-00	FUSIBLE	22	5%	1/4W	F
R905	1-249-433-11	CARBON	22K	5%	1/4W	
**********						
	* 1-639-332-11	RELAY BOARD				
		**********				
**********						
	* 1-639-333-11	PRIMARY BOARD				
		**********				
	* 3-346-266-12	PLATE, GROUND				
		〈 CAPACITOR 〉				
C901	⚠ 1-161-744-00	CERAMIC	0.01uF		400V	
C902	⚠ 1-161-742-00	CERAMIC	0.0022uF	20%	400V	
C903	⚠ 1-161-742-00	CERAMIC	0.0022uF	20%	400V	
C904	⚠ 1-161-742-00	CERAMIC	0.0022uF	20%	400V	
C905	⚠ 1-161-742-00	CERAMIC	0.0022uF	20%	400V	
C906	⚠ 1-161-744-00	CERAMIC	0.01uF		400V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

PRIMARY | REC VOL | REEL MOTOR | RF AMP | RGN SW

Ref. No.	Part No.	Description				Remarks
		⟨ CONNECTOR ⟩				
CN901	* 1-564-321-00	PIN, CONNECTOR 2P				
CN902	1-564-321-00	PIN, CONNECTOR 2P				
		⟨ COIL ⟩				
L901	⚠ 1-421-915-11	COIL, LINE FILTER				
**********						
	* 1-639-325-11	REC VOL BOARD				
		**********				
		⟨ VARIABLE RESISTOR ⟩				
RV102	1-238-833-21	RES, VAR, CARBON 20K/20K (REC LEVEL)				
**********						
	* 1-639-304-11	REEL MOTOR BOARD				
		**********				
		⟨ CAPACITOR ⟩				
C07	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V	
		⟨ MOTOR ⟩				
M905	X-3363-110-1	MOTOR ASSY (REEL)				
**********						
		RF AMP BOARD, COMPLETE				
		**********				
		⟨ CAPACITOR ⟩				
C1	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C2	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C3	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C4	1-162-638-11	CERAMIC CHIP	1uF		16V	
C5	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V	
C6	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C7	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C8	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C9	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C11	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C12	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V	
C13	1-162-638-11	CERAMIC CHIP	1uF		16V	
C14	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C15	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C16	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C17	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C19	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C20	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C21	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C22	1-126-603-11	ELECT CHIP	4.7uF	20%	35V	
C23	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C24	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C25	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C26	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C27	1-162-638-11	CERAMIC CHIP	1uF		16V	
C28	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
		⟨ CONNECTOR ⟩				
CN51	* 1-566-207-11	PIN, CONNECTOR (PC BOARD) 14P				
CN52	* 1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P				
		⟨ IC ⟩				
IC1	8-752-039-01	IC CXA1364R				
		⟨ COIL ⟩				
L1	1-408-781-00	INDUCTOR CHIP 22uH				
L2	1-408-789-21	INDUCTOR, CHIP 100uH				
L3	1-408-781-00	INDUCTOR CHIP 22uH				
		⟨ RESISTOR ⟩				
R1	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R2	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R3	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R4	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R5	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R6	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R7	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R8	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R9	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R10	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R11	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R12	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R13	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R14	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R15	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R16	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R17	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R18	1-216-073-00	METAL CHIP	10K	5%	1/10W	
		⟨ VARIABLE RESISTOR ⟩				
RV1	1-238-181-11	RES, ADJ, CERMET 4.7K				
RV2	1-238-181-11	RES, ADJ, CERMET 4.7K				
**********						
	* 1-639-301-11	RGN SW BOARD				
		**********				
		⟨ SWITCH ⟩				
S01	1-571-878-11	SWITCH, PUSH (2 KEY) (CASSETTE IN/REC PROOF)				

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Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SW (IN) SW (OUT) TIMER SW TOP END SENSOR

Ref. No.	Part No.	Description	Remarks
	* 1-639-647-11	SW (IN) BOARD	
		**********	
		⟨ SWITCH ⟩	
S11	1-572-247-11	SWITCH, SLIDE (CASSETTE TABLE IN)	
**********			
	* 1-639-648-11	SW (OUT) BOARD	
		**********	
		⟨ SWITCH ⟩	
S12	1-570-975-11	SWITCH, SLIDE (CASSETTE TABLE OUT)	
**********			
	* 1-639-329-11	TIMER SW BOARD	
		**********	
		⟨ IC ⟩	
IC704	8-749-922-36	IC GP1U50XB	
		⟨ RESISTOR ⟩	
R711	1-249-428-11	CARBON 8.2K 5% 1/4W	
R712	1-249-434-11	CARBON 27K 5% 1/4W	
		⟨ SWITCH ⟩	
S701	1-571-520-11	SWITCH, SLIDE (TIMER)	
S703	1-570-974-11	SWITCH, SLIDE (REC MODE)	
**********			
	* 1-639-305-11	TOP END SENSOR BOARD	
		**********	
	* 3-368-456-01	HOLDER (END SENSOR LIGHT)	
	* 3-368-457-01	HOLDER (END SENSOR) (RECIEVE)	
		⟨ DIODE ⟩	
D01	8-719-951-03	DIODE GL-453	
		⟨ PHOTO INTERUPTER ⟩	
PH03	8-729-907-25	TRANSISTOR PT4850F	
PH04	8-729-907-25	TRANSISTOR PT4850F	
**********			
		MISCELLANEOUS	
		**********	
10 ⚠	1-575-912-11	CORD, POWER	
62	1-590-321-71	LEAD (WITH CONNECTOR)	
109	1-590-915-11	WIRE, FLAT TYPE (30 CORE)	
110	1-590-916-11	WIRE, FLAT TYPE (10 CORE)	
111	1-590-914-11	WIRE, FLAT TYPE (6 CORE)	
325	8-848-567-11	DRUM ASSY DOU-03A	

Ref. No.	Part No.	Description	Remarks
F901 ⚠	1-532-286-00	FUSE, TIME-LAG (T2.5A)	
FL701	1-519-672-11	INDICATOR TUBE, FLUORESCENT	
M901	A-2003-448-A	MOTOR ASSY (CASSETTE COMPARTMENT)	
M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	
M903	X-3363-109-1	MOTOR ASSY (CAM)	
M905	X-3363-110-1	MOTOR ASSY (REEL)	
PM902	1-454-536-11	SOLENOID, PLUNGER (BT CONTROL)	
PM903	1-454-535-11	SOLENOID, PLUNGER (BRAKE)	
S901 ⚠	1-554-920-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
T901 ⚠	1-450-557-11	TRANSFORMER, POWER	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-465-972-11	REMOTE COMMANDER (RM-D670A)	
	1-559-533-11	CORD, CONNECTION	
	3-754-303-11	MANUAL, INSTRUCTION (AEP) (English, French, Spanish, Portuguese)	
	3-754-303-41	MANUAL, INSTRUCTION (AEP) (German, Dutch, Swedish, Italian)	
	3-754-303-51	MANUAL, INSTRUCTION (G) (German)	
	* 4-931-451-01	CUSHION	
	* 3-373-774-01	INDIVIDUAL CARTON	

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HARDWARE LIST

#1	7-682-548-09	SCREW +BVTT 3X8 (S)
#2	7-685-647-79	SCREW, TAPPING
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#5	7-682-547-04	SCREW +BVTT 3X6 (S)
#6	7-682-560-04	SCREW +BVTT 4X6 (S)
#7	7-621-772-10	SCREW +B 2X4
#8	7-621-772-00	SCREW +B 2X3
#9	7-682-545-09	SCREW +B 3X4
#10	7-621-255-45	SCREW +P 2X6
#11	7-621-775-08	SCREW +B 2.6X3
#12	7-621-773-86	SCREW +B 2.6X4
#13	7-682-147-15	SCREW, TR
#20	7-621-255-20	SCREW +BVTT 2X4 (S)
#21	7-627-854-07	PRECISION SCREW +P 2X2.5 TYPE3
#22	7-627-556-17	SCREW, PRECISION +P 2.6X3 TYPE1
#23	7-627-852-27	+P 1.7X3
#24	7-621-255-15	SCREW +P 2X3
#25	7-627-552-27	SCREW, PRECISION +P 1.7X2
#26	7-627-552-47	SCREW, PRECISION +P 1.7X4
#27	7-621-772-08	SCREW +B 2X3
#28	7-621-772-18	SCREW +B 2X4
#29	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S
#30	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S

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